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FOR ALL OF A. I. ROOT'S APIARIAN SUPPLIES.

FOUNDATION is Our Own Make.

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Tested Italian Queens.

By return mail, \$1.00 each. Hybrids, 20c; 6 for \$1.

J. A. GREEN, Dayton, Illinois.

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GOLDEN ITALIAN QUEENS.

Our 5-banded Italians are giving perfect satisfaction; gentle, excellent workers, non-robbers, and the most beautiful bees in existence. Won first premium at Illinois State Fair in 1890. The judge said, "The drones are the yellowest I ever saw." Queens warranted purely mated; and replaced if they produce hybrid bees. One warranted queen, \$1.00; six for \$5.00; tested, July, \$1.75; after, \$1.50; selected tested, \$3.00; breeders, the best, \$5.00. No foul brood. Safe arrival and satisfaction guaranteed. Reference, our P. M.

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Brown and white Leghorn, Plymouth Rock, and Black Minorca Eggs, \$1.25 per 13. Strawberry plants, 100, \$1; 1000, \$3.50. Raspberry plants, 100, \$1.50; 1000, \$5. Illustrated circular free. GEEBROS., ST. MARYS, MO.

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These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

The D. A. Jones Co., Ltd., Beeton, Ont.

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Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have doubled the amount of beehives, etc., to make, and we expect to do it all with this saw. It will do all you say it will." Catalogue and Price List free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT. 23tfdb



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AN Elegant Monthly for the FAMILY and FIRESIDE. Printed in the highest style of the art, and embellished with magnificent Engravings. Sample FREE. Agents Wanted.

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PUBLISHERS

CHICAGO, ILL.

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Cash for Beeswax!

Will pay 25c per lb. cash, or 28c in trade for any quantity of good, fair, average beeswax, delivered at our E. R. station. The same will be sold to those who wish to purchase, at 31c per lb., or 35c for best selected wax.

Unless you put your name on the b-x, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by exp. wss.

A. I. ROOT, Medina, Ohio.

THE PECOS VALLEY THE OF FRUIT BELT NEW MEXICO

Over 100 miles of irrigating canals now completed, each from 18 to 60 feet wide and carrying 5 to 7 feet of water.

Over 300,000 acres of the richest lands in the world already available for irrigation and farming under these canals, twenty-five per cent, of which are still subject to entry under the homestead laws.

Other lands for sale at \$15 to \$30 an acre and on easy terms.

The Pecos River being fed by never failing springs of immense size, the water supply for all the canals can carry is assured.

Climatic and soil conditions here are superior to those of Southern California. All the fruits grown there can be produced here, except oranges and lemons, while the Pecos Valley grows all the cereals, vegetables and grasses that can be grown anywhere on this continent, while the neighboring mines afford a home market for all products.

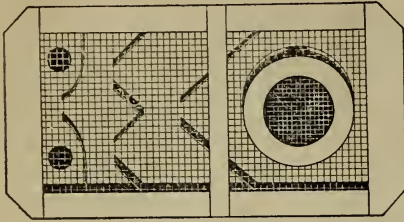
Our farmers raise two crops a year of grain and vegetables, five crops of hay, and stock grazes out doors all winter. Our climate is a perfect antidote for consumption and all throat and lung diseases.

Send for maps and illustrated pamphlets, giving full particulars.

PECOS IRRIGATION & IMPROVEMENT CO.,
EDDY NEW MEXICO.

In responding to this advertisement mention GLEANINGS.

The Latest and Best Bee-Escapes!



The "New Dibbern" and "Little Giant."

Two entirely new escapes just out. They work rapidly, and no bees return through them. They ventilate the super, and all parts can be seen and instantly cleaned. Satisfaction guaranteed or money refunded. 16-17d

Prices, by mail, either pattern, 20c.

per dozen, \$2.25.

No patents. Discounts to the trade.

C. H. DIBBERN, Milan, Ill.
Please mention this paper.

Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines

Iowa, at Root's Prices.

The largest supply business

in the West. Established 1885

Dovetailed Hives, Sections,

Foundations, Ex-

tractors, Smokers, Veils,

Crates, Feeders, Clover

Seeds, etc. Imported

Italian Queens, Queens and

Bees. Sample copy of our

Bee Journal, "The West-

ern Bee-Keeper," and Latest

Catalogue mailed Free to Bee-keepers.

JOSEPH NYSEWANDER, DES MOINES, IOWA.

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3ftdb

TESTED ITALIAN QUEENS, 75 CTS., HYBRIDS, 25 CTS.

I re-queen my yard every year. None of the queens older than one year. T. H. KLOER,
16tfdb 421 Willow St., Terre Haute, Ind.

FIVE-BANDED GOLDEN RED- CLOVER BEES.

If you want bees that will work on red clover, try one of our 5-banded queens. Queens in August, untested, 75 cts.; ½ doz., \$3.60; tested, \$1.50; select, \$2.00; the very best, \$4.00. Descriptive circular free.

LEININGER BROS.,

FT. JENNINGS, OHIO.

10tfdb

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BEE - HIVES! SECTIONS!

AND ALL APIARIAN APPLIANCES.

Our Motto: Good Goods and Low Prices.

Catalogue free for your name on a postal card.

LEAHY M'F'G CO.,

HIGGINSVILLE, Mo.

14tfdb

Please mention this paper.

A Four-Color Label for Only 75 Cts. Per Thousand.

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2½ x 1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

A. I. ROOT, Medina, O.

DON'T FORGET TO REMEMBER

ROOT'S HOUSEHOLD REPAIRING OUTFIT!



This consists of the tools and materials shown in the cut. It enables one to do his own half-soling, rubber, boot, shoe, and harness repairing. No pegs needed—simply wire clinch nails. Saves time, trouble, wet feet, vexation, and expense. Any boy can use it. Sells like hot cakes. Agents wanted. The whole outfit, neatly boxed, 20 lbs., only \$2.00. Send for circular.

ROOT BROS., Medina, O.

In responding to this advertisement mention GLEANINGS.

STRAWBERRY GROWERS!

Try the Enhance. Very large, productive, and good shipper. Perfect flower. Begins to ripen as soon as Crescent; holds out with Gandy. Plants, postpaid, \$1.50 per doz.; Haverland and Bubach, 75c per 1 doz. Address 16-17d

JACOB GUISINGER Ada, O.

BY RETURN MAIL, 400

Golden Italian Queens. Tested, \$1.00 each; untested, 70c. 3 for \$1.80. HIVES, SECTIONS, FOUNDATION, and all BEE-KEEPERS SUPPLIES kept in stock. Catalog free. **JOHN NEBEL & SON, High Hill, Mo.**

FOR SALE.

One 40-horse-power steam engine and locomotive, or fire-box boiler, in good order. Price \$500 on cars here. 16-17-18d

T. A. POTTS, Martinsburg, W. Va.

STRAWBERRY GROWING

A CERTAINTY AND A PLEASURE

By growing the ENHANCE, a new and well-tested sort, succeeds everywhere. Most reliable, most productive, largest shipping and all-purpose berry extant. Send for description and price.

16-17d

HENRY YOUNG, ADA, OHIO.

Please mention this paper.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

6tfdb

NOVELTY CO.,

Rock Falls, Illinois.

NEW FACTORY.

No. 1 Sections, \$3.50; No. 2, \$2.75. Fine Comb Foundation a specialty.

M. S. ROOP, 520 East Broadway,

6-17db

Council Bluffs, Ia.

In responding to this advertisement mention GLEANINGS.

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

16-ftdb

**J. STAUFFER & SONS,
Successors to B. J. Miller & Co.,
Nappanee, Ind.**

In writing advertisers please mention this paper.

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Wants or Exchange Department.

Notices will be inserted under this head at one half our usual rates. All advertisements intended for this department must not exceed five lines, and you must say you want your adv't in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these "swaps."

WANTED—To exchange wall paper, from 5c a roll and up, for honey. J. S. SCOVEN, 12tfdb Kokomo, Ind.

WANTED—To exchange pure Scotch collie pups for tested Italian queens. 12tfdb N. A. KNAPP, Rochester, Lorain Co., O.

WANTED—All the names of persons running apple-driers. Will pay liberally for same. W. D. SOPER & CO., Box Makers, 15-18db Jackson, Mich.

WANTED—To exchange a foot-power saw, almost new, and a printing-press, 4½x7½, also a press 7x11, for honey. A. D. ELLINGWOOD, 16 17d Berlin Falls, N. H.

WANTED—To exchange apiary of 160 colonies, with every thing needed in the business—first class and in first-class location—for land, city lots, mdse, or offers. To those meaning business I invite the closest inspection of my outfit and location. 17-18d H. L. GRAHAM, Letts, Ia.

WANTED—To exchange two printing-presses, type, etc. Want honey, Barnes saw, foot-power press, or body type. Write for printed list of articles to exchange. 17tfdb MODEL STAMP WORKS, Shenandoah, Ia.

WANTED—To exchange fruit-tree or ornamental shrubs for a copying-press for letters, a safe, or a shotgun. GEO. GOULD & SON, 17d Villa Ridge, Ill.

SALE OR EXCHANGE—Catalpa Koempferii, 1 year old, Marlboro, Cuthbert raspberry, curled-leaved Parsley seed. 17d F. J. M. OTTO, Sandusky, O.

WANTED—To rent or purchase an apiary of one or two hundred colonies in California or Arizona. A. CARDER, Hebron, Boone Co., Ky. 17-18d

For Sale.

PORTABLE ENGINE AND BOILER,
4 HORSE POWER.

In good condition. Address

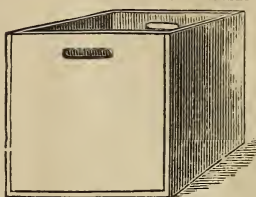
LOWRY JOHNSON, Masontown, Pa.

Manufacturer Utility Bee Hives, Smokers, and Feeders. 17tfdb

POTATO-BOXES.

GALVANIZED BOUND.

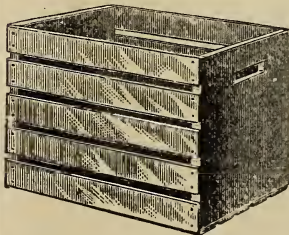
(TERRY'S).



These are made of basswood, bound with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Although they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price, nailed up, 25 c each; 10, \$2.25; 100, \$20.00. In the flat, including nails and galvanized iron, Per pkg. of 1 d-z., 2 nailed and 10 packed inside \$2.10; 10 pkgs., 5 per cent off.

SLATTED POTATO-BOX



As the pieces of which the above are made are mostly from remnants of basswood used in making sections, we can furnish them nailed up for 20 cents each; 10 for \$1.85; 100, \$16.00. Material in the flat, including nails, in packages of 12 boxes each, at \$1.50 per package, and each package includes two of the 12 boxes nailed up, complete. Ten pkgs., 5% off. Please be careful in ordering to say whether you want the galvanized bound or the slatted boxes

A. I. ROOT, Medina, O.

Black and Hybrid Queens For Sale.

75 hybrid queens for sale at 30 cts. each, 50 cts. for selected. Most are clipped and young. CHARLES H. THIES, Steelville, Randolph Co., Ill.

I have quite a number of nice mismated Italian queens which I will sell for 40 cts. each. Send now. A. D. ELLINGWOOD, Berlin Falls, N. H.

KIND WORDS FROM OUR CUSTOMERS.

I received the Doolittle wax-extractor ordered from you; and after giving it a fair trial I must say it gives entire satisfaction, and I recommend it to all those wishing a labor-saving implement. Plaquemine, La., Aug. 7. IGNACE TULLIER.

GLEANINGS is just received, dressed in its new cover. Changes are not always for the better, but I do think your designer has this time given you a cover that, as the "Vassar girls" say, "is just splendid." What more can I say? As to contents, keep it just as it is. "Variety is the spice of life," and whoever finds fault with the price is not worth noticing. Go on as you have begun, and may the Lord continue to bless you in your work. No. Attleboro, Mass., Aug. 5. JOS. E. POND.

CONVENTION NOTICES.

The Central Michigan Bee-keepers' Association will be held at Pioneer rooms, Capitol, on Wednesday, Sept. 16, at 9 A.M. All are invited. W. A. BARNES, Sec., Lansing.

HONEY COLUMN.

CITY MARKETS.

ALBANY.—*Honey.*—We have received, up to date, 300 cases of comb honey. Owing to extreme hot weather for the past few days demand has been very light; but we look for much better trade the fore part of September. From advices received, the crop in New York State will be very large, and prices not as high as last season. We quote: Fancy white, 1-lb. sections, 16¢; fair to good, 14¢@15¢; 1½-lb. sections, a cent less; buckwheat, 11¢@13¢. Extracted, light, 7¢@8¢; dark, 6¢@7¢. CHAS. McCULLOCH & Co., Aug. 22. 393, 395, 397 Broadway, Albany, N. Y.

PHILADELPHIA.—*Honey.*—We do not quite agree with some of your correspondents in regard to the present and coming prices of honey being weak and depressed, but think that honey will not be interfered with by other sweets being plentiful and lower priced, as people who buy honey will not take any substitute on account of price. We have orders now, at prices very little if any lower than last season, and have a large outlet for the goods. We shall be glad to receive consignments, and guarantee to get best market rates, and remit promptly; or, if preferred, we will advance two-thirds of the value in cash. We quote prices: Fancy white, put up in neat boxes, 1-lb. caps, 16¢@18¢; 1-lb. white, 15¢@16¢; 2-lb. white, 13¢@14¢. Buckwheat, 10¢@12¢, as to style, put up. Extracted, 7¢@8¢. For basswood, clover, or yellow, 7¢@7½¢. Fall flowers or southern, 6¢@6½¢. E. J. WALKER, Aug. 19. 31 South Water St., Philadelphia, Pa.

BOSTON.—*Honey.*—New honey is coming on the market from Vermont, and is certainly as fine as we have ever seen. It is starting in at from 15¢@16¢, and selling fairly well considering the extremely hot weather. We think it is a mistake to market new honey before Sept. 1; but as others are sending in their honey to this market, we, of course, have to have a little to keep along with the demand. Extracted, 6¢@9¢. Beeswax, none on hand. BLAKE & RIPLEY, Boston, Mass.

ST. LOUIS.—*Honey.*—There is very little of change to report. Comb in good supply, but light demand at 10¢@13¢ according to quality. Strained and extracted at 5½¢ in barrels, 7¢ in cans. D. G. TUTT GROCER CO., Aug. 21. St. Louis, Mo.

COLUMBUS.—*Honey.*—White-clover honey very scarce; nice stock in one-pound sections would bring 18¢@20¢. No. 2 stock would meet with good sale at 15¢. No extracted wanted in this market. EARLE CLICKINGER, Aug. 17. 121 S. 4th St., Columbus, O.

CINCINNATI.—*Honey.*—There is a plentiful supply of most kinds of honey, with a fair demand. Extracted honey brings 5¢@8¢ on arrival. Comb honey 14¢@16¢ for best white in a jobbing way. Beeswax.—Demand is fair, at 23¢@25¢ on arrival, for good to choice yellow. CHAS. F. MUTH & SON, Aug. 18. Cincinnati, O.

KANSAS CITY.—*Honey.*—Demand light; supply light, but sufficient for the demand. We quote: 1-lb. white comb, 15¢@16¢; 1-lb. dark, 10¢@12¢. Extracted, white, 6½¢@7¢; dark, 5¢@6¢. Beeswax, 22¢@25¢. Aug. 15. CLEMONS, MASON & Co., Kansas City, Mo.

ST. LOUIS.—*Honey.*—Our honey market is dull on account of the low price of sugar. Extracted, Southern, in barrels, dark, 5¢; choice light, 5¼¢@5½¢; white-clover in small cans, 5 to 10 lbs., 7¢@8¢; kegs, 6½¢. Comb honey, dark, 9¢@10¢; fair, 11¢@12¢; choice white-clover, 13¢@14¢. Beeswax, prime, 25½¢; burnt and greasy, half price. W. B. WESTCOTT & Co., Aug. 13. St. Louis, Mo.

SAN FRANCISCO.—*Honey.*—Honey remains very firm, and owners are asking higher prices. The crop is a great deal smaller than for years. We quote: Extracted honey, 5¼¢@6¢; 1-lb. frame, 12¢@14¢; 2-lb., 9¢@11¢. Beeswax, not plentiful, and selling at 24¢. SCHACHT, LEMCKE & STEINER, Aug. 22. San Francisco, Cal.

NEW YORK.—*Honey.*—New crop comb honey is now arriving. We quote for the present: Fancy white 1-lb. sections, 15¢@16¢; 2 lbs., 13¢@14¢; fair white, 1 lb., 13¢@14¢; 2 lbs., 12¢. No buckwheat comb in the market as yet. Extracted in good supply, demand limited. We quote: California, 7¢@7½¢; basswood, 7¢@7½¢; orange bloom, 7¢@7½¢. Southern, common, 65¢@70¢ per gal.; choice, 70¢@75¢. Beeswax, very dull, 25¢@26¢. HILDRETH BROS. & SEGELKEN, Aug. 27. 28 & 30 West Broadway, New York.

DETROIT.—*Honey.*—Best comb honey, 13¢@14¢. Extracted, 7¢@8¢. Beeswax, 26¢@27¢. M. H. HUNT, Bell Branch, Mich. Aug. 19.

FOR SALE.—800 lbs. white honey in 1-lb. boxes at 14 cents per lb., delivered at R. R. WM. VAN AUKEN, Woodville, Jeff. Co., N. Y.

FOR SALE.—6000 lbs. of white-clover and basswood honey, somewhat colored with honey-dew, in 24-lb. cases, 1-lb. sections, delivered free on board cars at Dixon at 10½¢ per lb. E. BAER, Dixon, Lee Co., Ill.

FOR SALE.—6 tons alfalfa and sweet-clover honey in 60-lb. cans, 5¢ by the ton. Must sell. A. B. THOMAS, Payson, Utah Co., Utah.

I am prepared to furnish pure extracted honey in 60-lb. tin cans. New cases and cans; graded goods. Carloads a specialty. Address E. LOVETT, 11tfdb San Diego, Cal.

Honey, Beeswax, Etc.

We are now in position to receive honey and beeswax on consignments, and to obtain best market prices for comb and extracted honey. Last year we could have disposed of as much again honey as we received, and our outlet this year will be still better. Correspondence solicited.

CHAS. ISRAEL & BRO.,
110 HUDSON ST., N. Y.

Dealers and Commission Merchants in Honey, Beeswax, Maple Syrup, Sugar, etc. 16tfdb
Please mention this paper.

A 6-HORSE-POWER ENGINE AND BOILER

For sale at a bargain, or will trade for comb honey. 17tfdb Address J. A. ROE, Union City, Ind.

SPECIAL NOTICE.

50 colonies of Italian bees for sale. They are in first-class condition; hives chock full of bees and honey. Also a fine lot of choice queens for sale. Not going out of business, but shall continue as ever to fill orders for any thing in our line of trade. For full particulars address 17-18d.

J. M. YOUNG,

BOX 874.

PLATTSMOUTH, NEB.

Perfection Winter-Cases, with tin roof, for the next 60 days, complete in flat, 75 cts.; made up, \$1.25; 10 per cent off on orders for 5 or more. 17tfdb

HILL MFG. CO., BOX 120, DENNISON, O.
Please mention this paper.

N. A. KNAPP, Rochester, Lorain Co., O.,

HAS FOR SALE

50 STRONG COLONIES OF PURE ITALIAN BEES,
500 WHITE AND BLACK FERRETS.

Also a fine lot of Scotch collie and coon-dog pups. Prices sent on application. 17tfdb
Please mention this paper.

100 PURE ITALIAN QUEENS

For the next 30 days will be sold as follows: Tested queens, \$1 each; untested, 70¢ each; 3 for \$1.75; 5 or more, 50¢ each. All queens bred from select imported and home-bred queens. Safe arrival guaranteed. D. G. EDWINSTON, 15-19d Adrian, Lenawee Co., Mich.

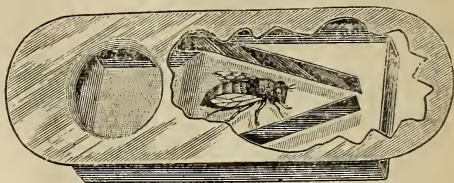
ONE COLONY Saved from Death the Coming Winter Would Repay the cost of a copy of "ADVANCED BEE CULTURE" ten Times Over. In 5 of its 32 Chapters may be Found the Best That is Known upon Wintering Bees. It costs 50 cents but its Perusal may Make you \$50 Richer next Spring. The "REVIEW" and this Book for \$1.25. If not Acquainted with the "REVIEW," send for Samples. W. Z. HUTCHINSON, Flint, Michigan.

Porter's Spring Bee-Escape.

We guarantee it to be the best escape known, and far superior to all others. If, on trial of from one to a dozen, you do not find them so, or if they do not prove satisfactory in every way, return them by mail within 90 days after receipt, and we will refund your money.

PRICES:—Each, by mail, postpaid, with full directions, 20c; per dozen, \$2.25. Send for circular and testimonials. Supply dealers, send for wholesale prices.

10tfdb R. & E. C. PORTER, LEWISTOWN, ILL.



Responding to this advertisement mention GLEANINGS.



A glimpse of our Factory, now making carloads of Dovetailed Hives, Lang, Simp, hives, plain Lang, hives, Alternating hives, Chaff hives, sections, etc. Many articles not made by others.

We can furnish, at wholesale or retail, Every thing of practical construction needed in the apiary, and at Lowest Prices. Satisfaction guaranteed. Send for our New Catalogue, 51 illustrated pages, free to all.

E. KRETCHMER, Red Oak, Iowa.

Responding to this advertisement mention GLEANINGS.

I MAKE THE Benton Shipping and Introducing Cage

in two styles, at \$10.00 and \$20.00 per 1000. I am sending them all over the country. The largest queen-breeders are using them, and are enthusiastic in their praise. Send your order now, and get 5 per cent discount from above prices. A full line of

BEE-KEEPERS' SUPPLIES

always in stock. Catalogues free. 17-21d
C. W. COSTELLO, WATERBORO, YORK CO., ME.

In writing to advertisers please mention this paper. 3-8db

FOR SALE!

Italian bees bred for business and beauty combined, for only \$3 (7-frame Root hives), if sold by Sept. 15. Any number from 1 to 60. Guaranteed free from disease. Do not miss a good chance for a bargain. 17d

W. V. MOOREHOUSE, LAFAYETTE, IND.

Please mention this paper.

Apiary and Storeroom for Sale.

In Central Iowa, 80 colonies Italian bees in modified 10-frame L. hives, and all necessary modern implements. A good supply of white clover, basswood, and a great variety of other bee-pasturage. No large apiary within ten miles; plenty of room for out-apiaries. Also a good location for a store or creamery. A good house with 12 rooms, new barn, 36x42 feet; good well and cistern; 20 acres of land, 3 acres used for raising truck, the rest for pasturage; all fenced with hog-tight fence. A fine lot of young basswood and other kinds of timber growing; ¼ mile from school and Sunday school. Reason for selling, old age and poor health. For further particulars, address W. R. H., 17-19 21d
St. Anthony, Marshall Co., Ia.

Please mention this paper.

YELLOWEST ITALIANS.

My bees are the brightest and gentlest bees, and for honey-gatherers are equal to any. Send 5 cts. for sample and be convinced. One queen by mail, 75c.

25 tested Italian queens one year old, 75c each. These are fine ones, so don't miss this chance. Untested queens, August and September, 75c.

J. F. MICHAEL, German, Darke Co., Ohio.

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11-17db

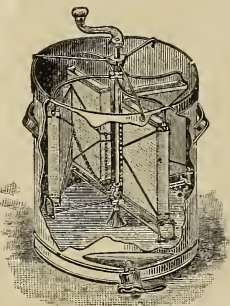
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Responding to this advertisement mention GLEANINGS.

16 SWARMS OF GOLDEN ITALIAN BEES FOR SALE at \$3 per colony; all on wired L. frames, built from foundation in chaff hives.

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T. S. THOMPSON,
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UNDOUBTEDLY THE BEST

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THE BEST IS THE CHEAPEST.

Stock first class. Rare and choice Small Fruits, Beautiful Roses, Shrubs. A specialty in Grapevines, Hyacinths, Tulips, Crocus, Narcissus, beautiful Scillas, Azaleas, Rhododendrons, etc. List free.

THEODORE JENNINGS,

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PORT CHESTER, N. Y.

Responding to this advertisement mention GLEANINGS.



Vol. XIX.

SEPTEMBER 1, 1891.

No. 17.

STRAY STRAWS

FROM DR. C. C. MILLER.

LINDEN is a better name than *linn* or *bass-wood*.

SUPER-CLEARER is what our English cousins call a bee-escape. Appropriate.

PLEURISY-ROOT is so highly spoken of as a honey-plant, why doesn't GLEANINGS give us a picture of it?

Popular Gardening says: "We believe bees are a good thing, and a number of colonies should be kept in or near every orchard."

PORTER'S ESCAPE is a good thing to put under a pile of supers with a little tent on top. It accommodates those bees which have a downward tendency.

I HAVE HOPE of A. I. Root. When a man cares as much as he does for a bed of portulaca, there's something of good in him. Some day he'll go crazy over roses.

THE NAMELESS DISEASE (bee paralysis) is said to be more plentiful this year, but, strangely enough, I haven't seen a single case, although plentiful in previous years.

THAT NEW TITLE-PAGE of GLEANINGS is a gem of art. For solid wear, however, month after month, nothing equals a very plain title-page with little besides the title.

HASTY says he is "sour on conventions." Take some saleratus, friend Hasty. A man who can write with so much good nature ought to be able to sweeten a whole convention.

THE *British Bee Journal* is making arrangements to send, post free, a packet of naphthaline sufficient for any single apiary, to be used as a preventive of foul brood, at a cost of twelve cents.

SWEET CLOVER comes a little too early, beginning right at the height of white clover. That which was cut before blooming does better, blooming in good shape after white clover is gone.

W. S. HART seems afraid I don't fuss enough with bees. Bless your heart, friend Hart, don't worry. Till swarming is over I go through every colony about once in ten days. I wish I didn't need to.

THE *Review* says: "The *Apiculturist* for August is but little more than a great big booming circular for the business of E. L. Pratt and H. Alley." Now look out for the *Apt.* saying, "The *Review* for September is but little more than a great big booming circular for the Heddon hive."

I WONDER if the fur cap that friend Root wears for the grip in August is the same that he wore to bed with him when I slept with him at the Chicago convention. But he took his boots off.

L. STACHELHAUSEN, in *Apiculturist*, combats the idea that bees are natives of warm climates, and maintains his ground with vigor. He thinks it more reasonable to believe them natives of Northern Germany.

SWEET CLOVER, says a writer in the *Omaha Bee*, is supplanting the wild sunflower in the neighborhood of that city, and he becomes poetically eloquent in speaking of the beauty and fragrance of the new comer.

EDITOR NEWMAN thinks I "don't know" that I'll have a "better crop than for years." May be I ought to have said "a better crop than for a year." Anyhow, when he, an editor, doesn't know, how should I?

CUCUMBERS don't seem to amount to any thing, so far, this year. At least, they don't do more than to supply what the bees use daily, without allowing any surplus. If they can't store any from 400 acres, I doubt whether they would from more.

THE PUNIC VIRGIN QUEENS I received from England were safely introduced. Then one of them came up missing—probably on her wedding-flight. The other is laying nicely, and I am waiting with interest to see what half-blood Punic will be like.

CABBAGE, as generally cooked, needs the stomach of an ostrich. Get your folks to try it this way: Chop it up and boil; pour off the water in which it was boiled, then dress with cream, butter, pepper, and salt. Cooked thus, a dyspeptic can make a whole meal of it.

TO RAISE HONEY successfully and prevent swarming, we need, first, to prevent drone-rearing; secondly, to prevent drone-rearing; third, to prevent drone-rearing. One frame full of drone comb will furnish all the drones that are needed for a full apiary of 100 colonies.—Dadant & Son, in *Review*.

THAT DRESS REFORM has every appearance now of becoming fashionable. Speed the day! Think of the dear women getting down from fourteen articles of dress to four, and being able to go the store and buy a suit ready made, just like a man, instead of several half days spent at a dressmaker's, standing up till they faint away!

HORSE-SHOES cost you how much a year? Well, they don't cost me much, and my horse's feet are healthier for it. The hind feet are never shod, unless in icy winter times. Then a full set all around, well steeled—plugged, they call it; the rest of the year, barefoot all around,

unless the feet get tender, and then a pair of tips in front only, at a cost of 15 cents per foot. These tips are merely old shoes with the heels cut off and tapered down so the horse's heel rests on the ground. It's a sort of cruelty to a horse to make him wear a hard, heavy piece of iron when traveling over the nice soft ground that would feel so cool and comfortable to his feet.

WHITE LETTUCE, *all* white, friend Root I don't believe you could ever reach. There is a beautiful foliage geranium, *Madame Salleroi*, having some of its leaves pure white—a beautiful thing. I tried a number of times to root a slip of the pure white, but failed every time, although partly green slips root easily. Then I took an established plant with a strong root, and pulled off all the green part, so as to have a white plant ready rooted. Do you believe, the whole thing died, root and all. There must be some green to keep up life.

A BEE-HUNT WITH A SEQUEL.

SOME FUNNY EXPERIENCES, AS RELATED BY
J. P. ISRAEL.

John and I went out on a bee-hunt. He had the fever bad. He said he wanted an apiary, even if it was only one hive. He was a great, strong, broad-shouldered fellow who could almost fell an ox with a single blow of his great fist. But his heart was great too—big enough to embrace all humanity. Nothing did him so much good as to do a kindness to any one. He would stop a plow in the field to lend a team to a poor neighbor, and even send a team and man to do the plowing. But he was quick to resent an injury or avenge a wrong. John was no fool either. He knew enough to know that he was not somebody else.

John had found the bees some days before, about five miles from his house. He had come over with his wagon for a hive, and insisted on my going along. As we passed John's place he took on his wife and two children. I did not like this, and told John so; but he said the bees were in a big piece of woods, and that his wife and children could wait under a tree at a safe distance from the bees. One of John's animals had a colt—a mule colt. Going up a long grade I noticed the colt appeared to be tired. I called John's attention to it, and told him the story that you published some years ago about Prof. Cook taking his little colt up into his carriage, and thus taking it home. At the same time I dilated on the professor's claim that, by kindness to animals, we could make them just as gentle as we please; and I added that Mr. Root indorsed all that Prof. Cook claimed.

Arrived on the ground, I found that these bees, in a moment of temporary insanity, had built up in a forked limb of a large oak. They were on the lowest limb, but it was twenty feet from the ground. I at once decided that the limb—bees and all—would have to come to the ground. I raked together about a cartload of forest-leaves and set them on fire. You can create a world of smoke with forest-leaves, and need not let them blaze at all. Well, the smoke poured up among the bees, and set them to howling at once. I got John up the tree to saw off the limb.

"Now, John, take this rope; put the end of it over the limb above your head, then haul it down and make it fast to the limb the bees are on. When you saw off the bees I will let them down slowly to the ground."

"But how am I to saw? I can't hold on to that limb up there and stoop down to saw."

"All right, John. Here is a short rope. Tie one end of it to the upper limb."

"Well, it's done," said John, looking down.

"Now tie the other end around your neck, so that, if you fall, you won't fall far."

John's eyes blazed with indignation.

"Look here, old man; it's well for you that you've got me up this tree. If I were down there, there'd be a fight or a foot-race."

"I beg your pardon, John. Put it round your waist, and tie it securely."

"All right, old man. Now you're talking sense."

"But, John, if your brains lie in your heels as—"

"Now, there you go again—but, look out now; this limb is nearly off."

"All right, John. I'll let it down easy."

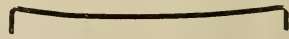
We had miscalculated the weight of the limb and bees, and I shot up into the air like a skyrocket. I heard John shout in derision, "Let 'em down easy!"

I looked up, and saw that great black limb rushing at me at the rate of ninety miles an hour.

If my head should strike that limb, it was certain destruction. A thousand thoughts seemed to rush through my mind at once. What would the poor bee-keepers around me do? What would they do in the hour of peril, without my wise counsel and fatherly advice? What would become of the bee-keeping fraternity, if such a star should set in cloudless night? What would GLEANINGS—no, no! GLEANINGS is already a victory. GLEANINGS will live—live without the aid of any one single man in all this world. All my anxiety was for others. Not a selfish thought sullied my generous and magnanimous soul. But after all I was equal to the occasion. I gathered into my iron frame all the agility of three combined circus—threw up my hind feet, and warded off the blow. The bees had alighted on the ground, and I on the limb. When I backed down the tree I found the limb and bees had turned clear over, thus making a natural reversible hive. Hang it in the air, and it was right side up. Hang it on the ground, and it was self-reversing.

John, this is the coming hive. Ten frames (for it has ten combs), fixed distances (because *their* Langstroth is not yet born), self-reversing every minute, for it is so crooked it can't lie still at all. My fortune is made! Hurrah! hurrah! Drawings, four dollars. New hive, just cut from the tree, two dollars. Beginners should take both—one will illustrate the other. Dear! A fraud? What's the matter with you? Didn't Mrs. Cotton sell her drawings for four dollars? Doesn't Dr. Hall charge four dollars for his little secret, which is no secret at all? Haven't I as good a right as any other swindler to make four dollars? Answer me that."

In fifteen minutes I had the comb and bees all in the new hive, ready for home. We did not intend to leave the bees there to fasten their combs. I did the fastening right there. How? Well, I will tell you. Bend a No. 16 wire like this,



so that it will spring tightly on the frame lengthwise. Take a frame and spring three of them on a side. Turn the frame over and fill it with comb. Now spring three more on this side—on top of the comb. Put the frame in your hive. You can haul it any place. The wire is bent inward, because, when it is sprung on the frame, it will hug the comb in the center and hold it fast. Strings? Why, strings are perfectly worthless. They do not and can not

brace the comb in the middle—the very place it needs bracing; and yet they are recommended in some bee-papers, and some very good bee-books. One author says they are the very thing, because the bees will eat them away in a few days! He was too lazy to spring off the wires.

When we got within a mile of John's ranch, near the top of a long grade, John saw that his colt was about done out. He stopped the wagon and declared he would put the colt in behind. To this I objected; but John replied, "Do you think you know more'n Prof. Cook? Didn't he take his colt inter his kerriage and haul it home? My colt is as good as his'n, and has as much sense. Didn't you tell me he knew all about bugs, and caterpillars, and so forth? And didn't you read lots to me about him intersectin' butterflies and grasshoppers, and other varmints? A feller that knows a caterpillar or a June-bug as well inside as I do outside ought to know a colt too."

"But, John, this is a mule colt. Prof. Cook had a horse colt."

"I don't care for that. A mule colt a'in't much of a mule till he gets inter the company of his feller-citizens. Look out there—" and he gathered up the mule and heaved it into the back end of the wagon. Thus the lady and the two children, the colt and the bees, occupied the first floor. John and I were hung away up in the air, on a high seat. John was right. That colt was as innocent as a baby that is twins. He lay right down and went to sleep. I was getting disgusted. Here we had been from home more than half a day without the least bit of fun—unless you call it fun to be shot up into the air as if from a catapult, and have to crab it backward down again. But I did not have to wait long. Whether the colt dreamed he was among "his feller-citizens," as John put it, or whether he was yearning, like myself, for a little fun, I can not decide. But all at once there was a wild scream—a hammering and battering noise, and John's wife was sent clear under the seat—mixed up with the two children—up against the front end-gate of the wagon. Then that mule commenced on the hive of bees. He went into the business as if he loved it. In a second he had kicked the cover loose, and the bees poured out. The screams of the woman and children rent the air—tore it into tatters in that immediate vicinity, in such a reckless manner that it took at least a week to mend it.

John jumped down into the wagon and threw the colt over the side. Then he pulled his wife from under the seat and threw her on top of the colt. The two children were quickly piled on top of their mother. Just then I jumped down and struck on the hive, and shut in the bees that had been pouring out all this time. But no sooner had I struck on the hive than John grabbed me, and over the side I went on top of the whole pile. John had gone clear mad, crazy! We were all in a pile, but it didn't take us long to find ourselves, for the bees were stinging furiously. I jerked up the oldest child and cried out, "Martha, break for the bushes! John, drive for your life, to get away from the bees—drive half a mile, and wait for us!"

I covered the child's face with my vest, and stuck it in the bushes. I couldn't help it—I had to pause on the edge of the bushes to see that colt kick. He never moved from the place where he had been thrown out. He stood there to "fight it out on that line." The air was full of bees, and they were furious. He kicked and bucked, and kicked again. He fought the air with his fore feet. He tried to stand on his head, but it was not a decided success. Then he bucked again; and while he was up in the

air he tried to paw the bees off his forehead. This brought him down on his nose. But he was up in a moment, and, with a look of disgust, as if the earth, air, and sky were against him, he rushed off after the wagon. So I was satisfied. We had had ten minutes of the keenest and most glorious fun! You see, I am only 68 years of age, and the hot young blood runs riot in my veins. Why wasn't the world all made out of fun?

When we got to the wagon I saw that John was angry. He would not speak more than a yes or no. So I took a short road through the hills to my own home.

Sumac, Cal., Aug., 1891.

J. P. ISRAEL.

[Friend I., when you spoke about that mule colt, in the fore part of the article, I began to surmise at once a fracas among the bees. There is nothing that makes the bees so awfully cross as to have their hive unceremoniously kicked or knocked about. Say, it must have been rather exhilarating to find yourself suddenly shooting up into the air. Verily, I believe I would have let go and dropped. We reserve the sequel till our next issue.] E. R.

HOW TO MAKE THE BEES ACCEPT THE DOO-LITTLE CELL-CUPS.

UPPER STORIES FOR CELL-BUILDING NOT ALWAYS RELIABLE.

I notice in GLEANINGS that you fail with the cell-cups. I will give you the benefit of my experience, and, if it will be worth anything, I shall only be glad. I don't depend on having the cells started in an upper story, as the bees will tear down the cups and start comb, especially if nectar is coming in; and if not, they will not start the cells. I fasten cups to bars or strips of comb on the plan of having cells built on strips of comb (the Alley plan, I believe). A frame will hold about 60 cups. This frame I place in a strong colony made queenless and broodless, and let it remain three or four hours, when the bees will be ready to accept the young larvæ placed in the cups, and will start from 25 to 40 cells—these the next day to be removed to an upper story where they will be completed, provided nectar is coming in; but if not, they may not perfect them as they should without feeding. At certain times I find these upper-story bees very inquisitive—especially so after swarming has passed. I find that, from about the 1st of July, in my locality, till fall flow of honey commences, the bees in upper stories are very tricky, and will not do to depend upon to work out and care for cells.

I find also, by experience, that it will not do to keep any colony building cells long at a time. They seem to get tired, and will not work as when first made queenless; upper stories are the same way. A colony made queenless and broodless, as I have mentioned above, and given a frame of cell-cups with larvæ, will start cells by the cup plan better, and more of them, and will continue to do so longer than by any other plan. I often use a colony that way for a whole week, by taking out those cells started, and give them fresh cups with larvæ.

Transferring larvæ to these cups is a very small matter when one gets used to it. When I make my cups I am not very careful as to the depth; but after they have hung in a hive three or four hours, if the bees do not cut them down properly I clip them off to the right depth with my honey-knife heated at the point.

I can't say that I see any difference in the queens reared in the cups and those the bees start in the strip plan; but it saves mutilating

the comb, and the cells are well apart, and are more easily transferred, as they become capped, to a nursery.

While I am writing I will say that I use pulverized sugar for candy instead of granulated sugar. This I work into honey that has been warmed until thin, and work well until it will not run. After my candy is made and given the bees, I notice it looks like granulated sugar.

The more I use the improved Benton cage, the more I like it.

J. D. FOOSHE.

Coronaca, S. C., Aug. 7.

[Your article above, friend F., is right in line with our experience, and gives the keynote why we first failed with the Doolittle queen-cell cups. We gave them, in our first trials, to an upper story of a strong colony having a queen, and this, strangely enough, was during the honey season. Out of a dozen cups given them with larvae at a time, we could secure on an average about 2 cells from a lot. The rest were either torn down, or what was more often the case, comb was being built in the space they occupied. In some cases comb completely covered cells that were nicely built out and capped over. Well, before we knew it, the upper story of our cell-building colony had become queenless, and it was then we began to have success with the cells given them. We could not imagine why the cells would be accepted in one case and not in the other, under apparently precisely the same conditions. We were forced to the conclusion that the absence of the queen in the lower story accounted for it, and an examination proved it. Our cell-cups are now given to queenless colonies to start; and nine-tenths of those cups are accepted. After they are once started, the upper story of a colony having a queen will build them out. We do not find any thing in Doolittle's book that contemplates just exactly the condition of cell-building as we find it in our own apiary. We have no doubt that Mr. Doolittle can enlighten us, or perhaps point out the missing link.

We, too, have found that the bees in an upper story sometimes get tired of cell-building, and after a while do not do their work so well.]

E. R. R.

SOME ITEMS.

BACILLUS DEPILIS.

What causes the nameless bee disease? Does any one know? Does the location of the individual hive cause it? These are the questions that are running through my mind at this time, and I thought a few facts along this line would not be amiss in GLEANINGS. Four years ago was the first I ever had this disease in my apiary that I know of. I then found it in one hive, and that colony became so depopulated that I united it with another for winter. The colony stood all summer near an ant-hill, which grew during the summer to a large size; thus the stand of this colony became of note in my mind, so that a mistake would be impossible as to the location. On this colony I tried no preventive, only carefully inspected the bees, hive, etc., but could come to no conclusion regarding the trouble. Three years ago no bees occupied that stand on account of the ant-hill, and during that summer I dug the ant-hill out one wet day, and stamped other earth in the hole, *a la* somebody—I can not tell who, but guess it was Prof. Cook. This dirt, when it hardened, kept the ants away that year. Last year I placed a colony on this stand having a queen in it that came from the South, and in about six weeks from the time the colony was placed there I

noticed that the ants had begun on their old location again, near the entrance of the hive, and in a week or so more I noticed that the nameless bee disease was putting in an appearance in the colony. In a short time this colony became worse than the first, if possible, they being out in front of the hive, rolling in the dirt by the hundreds, and finally dying to such an extent that there was a stench about the place. I now gave them three frames of brood from another hive to keep their strength up, killed the queen, and gave them another, *a la* Root. This new queen laid very prolifically, and I hoped that these new bees would be proof against the disease, as friend Root told us we might expect; but not so. These took the disease, or were never free from it, and all died before spring, in the cellar, while not another colony died, or came anywhere near it, that was wintered in the same cellar. This spring I placed another colony on the stand—a colony which had been perfectly healthy all of the season of 1890 (as were all the rest of my bees, except the one spoken of above), and in less than six weeks from the time this colony was placed on this stand it began to show signs of the disease, and to-day is nearly extinct from the great mortality of the bees, although the combs have been kept well filled with brood all the while. Some four weeks ago I tried the brine (or salt-water) plan, as recommended by Henry Alley and others, making a brine so strong that not nearly all of the salt would dissolve, and poured this on the combs and in the hive. For a few days I thought this was going to be a help, but now the bees are dying and rolling about in front of the hive as badly as ever, while on the combs and in the hive the condition is no better, although there is still plenty of salt in sight therein. I am now giving them brood and a new queen to try and see if they can be wintered. During all this time not another colony in the yard has shown signs of the disease. Can the location of this hive have any thing to do with the trouble, or the ants? With Dr. Miller I will say, "I don't know;" yet I must say that it is very singular. I have studied the colony as closely as possible; but so far I have no light as to what the trouble is and how it can be remedied.

KEEPING DRONE BROOD.

We queen-breeders often want to keep the very last eggs laid by the queen of our choice in drone-cells, so as to have a very few fine drones late in the season. By hand-picking these, after all the other drones are killed off, we can have things our way as to the mating of our queens. Now, I find that drones reared in July "play out" before October; hence, to have good strong drones in October they must come from eggs laid during the fore part of August. I have no difficulty in getting these eggs during the last of the honey harvest; but to get the bees to perfect them to living drones is where the trouble lies. Last year I tried placing these in a queenless colony, but only about 50 drones was the result out of about as many thousand eggs. This year I tried putting them in a populous colony which had lots of honey, putting them over the queen-excluder, in the second story, where I raise my queen-cells. This did better than last year, yet the bees destroyed over one-half of the eggs. Who, in a locality similar to mine, where basswood is the last honey crop, can tell me how to rear and keep drones during August and September?

QUEEN-CELLS FROM WAX CUPS.

I see friend Root is not having success with the wax cell-cups, again, although he reported success last spring. Now, my opinion regarding the failure is, that the trouble lies in han-

dling the larvæ. These very little larvæ are easily killed by rough handling, or handling them in too cool a temperature. The end of the instrument used should be very thin, and conform to the shape of the bottom of the cell, and before using be dipped in royal jelly, so that the little larva will float above the quill-point on this jelly in lifting it out. I find by looking over my record of this season, so far, that out of 996 cups used, as given in my book, 852 have been completed, and given nice queens; and I do not see why friend Root can not do as well, if the larvæ are not injured in manipulating them.

G. M. DOOLITTLE.

Borodino, N. Y.

RAMBLE NO. 44.

SITTING AT DOOLITTLE'S FEET.

From Syracuse to the outlet of Skaneateles Lake there are some changes to make, and some waiting to endure. Ordinarily, from

yond. The weather being decidedly torrid, I mopped the sweat from my brow for the twentieth time, took courage and went forward. As I walked up the road that led to his house I saw a man over on another road a quarter of a mile away, whom, from distant appearances, I thought to be Doolittle. When he turned up the road and followed me I knew it was Doolittle, and it was Bro. D. A short ride behind a large dapple-gray horse brought us to the residence.

As might be expected, he had the carriage well loaded with bees in those well-known nucleus boxes, which he had obtained from an out-apiary. Nuclei were immediately formed for cells, and during the forming of these nuclei there was an opportunity for looking over the bees. We found the colonies used for breeding were of a beautiful golden color; and what Mr. D. called five-banded were solid gold to the tip, which showed only a tinge of black. The bees were gentle to handle, and the orders for them were giving Bro. D. all he could do to fill them. His apiary and system have been so



DOOLITTLE'S HOME AND APIARY.

Skaneateles the journey is performed by stage; but as I landed from the train I learned that a little steamer was soon going up the lake. I availed myself of the opportunity, and had a delightful, restful, refreshing half-hour's ride until the dock at Borodino was touched. The village of Borodino is a mile from the landing, and forward I stepped with a light heart. Bees were merrily buzzing on raspberry bloom by the wayside, and an occasional glance at them revealed the golden Italians. Borodino is a little village of 160 people; and inquiry of the good-looking people I met revealed to me that Bro. Doolittle lived another mile be-

much written about and illustrated that I do not propose to treat on that subject in this article. The camera was brought out, and one view taken of the apiary and the residence; and I can write only somewhat personally of Mr. D. and his home life as I caught a brief glimpse of it.

Mr. Doolittle's hives are not so pretty as you would think to find in an apiary of such wide reputation. A good share of them are painted, but quite a number of the large hives are unpainted, and show the marks of many years' exposure. The hives that Mr. D. winters in his clamp are cumbersome double-walled hives

packed with straw, which are carried into the clamp, straw and all. As bee-keepers well know, Mr. D. uses the Gallup frame; and all his manipulations, either in raising comb honey, extracted honey, or queen-rearing, are performed with this frame. He has "become used to this management," likes it, and advocates it, and it is evidently none of the Rambler's business if he sticks to it. Still, I believe there are just as good and less cumbersome ways to accomplish the same ends.

Bro. D.'s avoirdupois is about 280 lbs.; still, he does not have the appearance of an unwieldy and clumsy man. It is, however, some labor to carry himself around; but there is steam enough in the system to do the business, with a surplus to spare. In personal appearance he is of average height, full florid complexion, sandy hair and beard, blue eyes, and, on the whole, a sanguine temperament. The queen of the household has the same general make-up as the head, only less in degree. Mrs. D. gets around to her daily cares with a perceptible limp, which is a cross patiently borne.

Mr. D. does not live in a mansion; but his home was erected under his own supervision, and is one of those modest American homes built according to present needs and means, and under the roof of which there is more real happiness and enjoyment than can be found in palace halls.

If, as some writer has said, refinement can be

of the heavens without becoming a broad and liberal thinker.

Another hobby is an annual season of hunt-



DOOLITTLE AND HIS HOBBIES.

ing and fishing. The beautiful Skaneateles Lake is a fine field for the exercise of the hook and rod; but from the contour of the country, and the apparent scarcity of large forests, I should judge the kind of game mostly pursued was targets. That this game was pursued with energy was proved by a fine stand of three telescopic rifles.

The little office had the general tidy appearance of the house; and the cosy corner where the Hammond type-writer is used is surrounded with other literary conveniences.

Mr. Doolittle is a useful man in the community in which he lives; is an active worker in the church, lives near his Maker by a daily study of his word and a daily communing with him in prayer; and in his conversation about those around him, and about the bee-keeping fraternity in general, I found him a man possessed of charity for all and malice toward none.

I have a lurking suspicion that Bro. Doolittle is not altogether suited with his locality. As a successful queen-breeder with an extensive patronage, he is aware that his season can be lengthened by a move further south. But for various reasons Borodino will be his home for some time yet.

In the early morning I took the stage for the busy outer world, and the pleasant home of Bro. D. will ever be cherished in the thoughts of the

RAMBLER.



SITTING AT THE FEET OF DOOLITTLE.

judged from the books and papers found in a house, then we can judge Mr. D. well up, for the latest and best magazines and papers are in profusion, while of bee-publications there are files of all for several years past.

While many mount their hobbies with so much noise that all the world knows it, Mr. D. very quietly gets upon his, and no doubt enjoys them just as well. It may surprise many of your readers to learn that he is an amateur astronomer, and has a fine telescope that will show the moons of Jupiter, the rings of Saturn, double stars, and many other wonders of the heavens. Still, he thinks his glass but an aggravation, as there is so much beyond he desires to fathom. In the study of this noble science we see where Bro. D. gets his breadth of thought, for no man can look into the wonders

[Your visit at Mr. Doolittle's I have read with much interest, as it revives many pleasant recollections of my recent visit there. I believe we have never before had an engraving of Doolittle's apiary, as much as it has been prominently before the bee-world during the last fifteen or twenty years. I took a Kodak view of it, but it was not large enough to reproduce in GLEANINGS with any effect. His hives and frames did not strike me as being as easy to manipulate as some, but then, as you say, he has got used to it. I can't help but think he would do as well with the L. frame and hive.—He lives in a beautiful section of country. His home and apiary is midway between two of the prettiest lakes in the world, only about a mile from each, I believe. I enjoyed my bicycle trip in this region; and if our friend only had good long seasons for queen-rearing I don't believe he would ever think of moving.]

E. R.

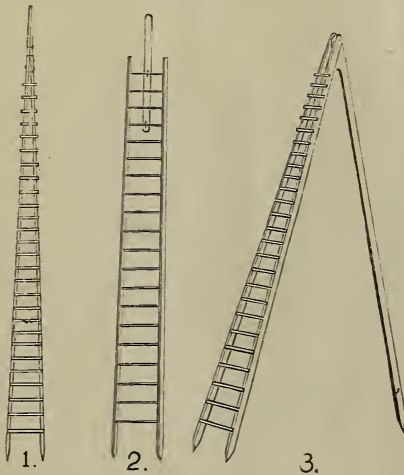
IMPROVED SWARMING-LADDERS.

DR. MILLER IMPROVES STRIMPL'S DEVICE.

Whoever has had even a little experience in trying to set a ladder against a tree, in among the limbs, will appreciate the upper terminus of Strimpl's swarming-ladder, as given on page 624. The lower extremity is also good—the sharp points to stick in the ground. I am inclined, however, to think that the middle part must be modified in order to stand the test of strength.

A very little reflection will show that it will be difficult to fasten the steps or rungs of the ladder securely enough. There is only a small surface on which to nail the rungs; and when the foot steps on them, it has a strong leverage to tear off the rungs. If holes are bored through the upright, so that no nails are needed, the leverage will still be there to split the upright, so that in any case there must be as much, and I am inclined to think a little more, weight of lumber than in the ordinary ladder, to secure the same strength.

But the desirable feature, the upper part ending in a single point, can be retained by a little modification of the common ladder. The picture will show what I mean.



SWARMING-LADDERS.

Fig. 1 is merely a common ladder having one side longer than the other, the short side coming close up to the long side, and a few of the upper rungs allowed to project.

A common ladder may readily be changed to answer the purpose by having a middle piece fastened to the upper rungs, as shown in the cut, Fig. 2. This middle piece projects above the two sides of the ladder as much as may be desirable. It may be necessary to use strap iron in fastening this middle piece to the upper and lower rounds to which it is attached.

It often happens that a swarm alights on a place where it is not easy to set a ladder conveniently against the tree, whether the ladder terminates in one or two points. Especially is this likely to be the case with bushy fruit-trees. The swarm is away out at the end of an overhanging limb, and it is hard to get the ladder anywhere near it. In this case a fruit-ladder described in *Popular Gardening* comes in. The principle is very old, Fig. 3. It is made of common inch boards, about 5 inches wide, a rest-piece coming between the two side-pieces at the top, and a bolt passing through the three

boards, holding them close together. This third piece is of the same width as the two sides for a little way at the upper end, and for the rest of the way about an inch narrower, so that the piece can be folded up, allowing the ladder to be set up against a tree the same as an ordinary ladder.

With Manum's device and a good hook, there ought to be very little need for ladders.

Marengo, Ill.

C. C. MILLER.

[As soon as I saw the diagram of Strimpl's ladder I recognized at once that he had given us something good. But now you have gone and made it a good deal better. I believe it would pay in every well-regulated apiary to have ladders like Nos. 1 and 3—that is, providing there are tall trees around. In our home apiary there is nothing but low grapevines; and with a fountain pump and a Manum swarmer it is seldom that a swarm gets out of our reach from the ground.]

E. R.

LUTHER W. GRAY.

SOME REASONS WHY WE SHOULD BE CAREFUL ABOUT ACCEPTING ADVERTISEMENTS.

Not a few of the friends have been offended because we have insisted on having full information in regard to the financial standing and general habits of a person before accepting advertisements; and we have, in consequence, received some pretty severe letters. I have thought best to give you an illustration by narrating a case in point, that some of our readers will no doubt be greatly interested in. On the 1st of May, 1890, the following advertisement appeared in our pages:

Tested Italian queens now ready, at \$1.00 each; untested, 75 cts; ready by return mail.

LUTHER W. GRAY, Orlando, Fla.

I may explain that we had had some previous acquaintance with friend Gray, and had accepted several advertisements. As no complaint appeared, we had no hesitation in accepting the above, especially as he says, in a postscript to us, "Give two lines of space to the underscored words, and make prominent 'Now Ready,' and '\$1.00.'" If there really were queens ready then, there should be no reason why they did not go by return mail. Very likely, friend Gray did have tested queens ready on hand. We hope these went by return mail; but before long, complaints began to come in. We wrote to him repeatedly, and we give space here for one of his replies:

Your letter of May 13th was received. I will make matters straight as soon as possible. On account of ill health I am staying a while in the mountains.

LUTHER W. GRAY.

Chattanooga, Tenn., May 22, 1891.

Now, I felt a good deal vexed with the above, for it seemed to me a rather cool piece of impudence. If it were myself, I believe my health would be improved more in sending money back, when I could not fill orders, than in using it to stay in the mountains. May be, however, I am too severe on people who are out of health. But before my health fails I hope God will give me grace to place my affairs in such shape that I can get sick with a clear conscience. Well, friend Gray has not sent the queens nor returned the money yet, and I have published him because many of his customers urgently demand it. When we could get no further letters from him, I obtained the address of his father. Then I suggested to his father that he might be able to help him to return the money, as he was unable to furnish the queens; or if he

could not do this. I suggested that he write something for print by way of explanation of his son's conduct, to which he replied as below:

LETTER FROM LUTHER GRAY'S FATHER.

Dear Sir:—I don't see why you are under obligations to advertise a sick man as being a fraud because he failed in business because of being sick; neither do I see how it will benefit you or Luther's creditors either. There never was a more honest boy than Luther, and more upright in all his ways, and no doubt he intended to fill his contracts, and will, if he gets well enough to attend to business. He started to Florida last fall, or winter (where he has some bees yet), but got worse before he got to his journey's end, and came back and has not been able to do any thing yet. He seems to be better now. I never heard the name of fraud used in his case, or applied to him before. Universal sympathy is expressed by all who know him. Many fail in business who are not sick, and are not always advertised as fraudulent. I do not think it would be pleasant or profitable for a man who has plenty of business, to say, in a public document, that Luther obtained money fraudulently. In fact, I know it would not. He has bought many lots of supplies from you, and some are here now—honey-extractor and other things. You can have them if you want them. He shipped them here from Florida, and paid more freight on them than they are worth. He used it but very little; but that is not your fault. I knew nothing of it. I suppose he did not like to ask us for money to pay back, hoping to be able to fill the orders, and perhaps will yet; if not, we may assist him.

WM. GRAY.

Zanesville, O., 19 N. 4th St., June 10, 1891.

Now, friends, let us try to take an unbiased view of this whole matter. Is Luther Gray a fraud or is he not? Can a man say honestly that he failed in business when he put in an advertisement like the one sent by friend Gray, and then kept or used the money when he found, on account of ill health, that he could not furnish the queens? Perhaps those who have lost money by him will have more decided opinions than others. My impression is, that an even \$100 would come pretty near settling all claims, and leaving friend Gray square with his fellow-men. The account has been sent to an attorney, but he replies that Mr. Gray is possessed of but little means, and is in poor health, so that nothing can be recovered by law. By the way, this whole transaction reminds me of a remark once made by our friend W. Z. Hutchinson, editor of the *Review*. He said the money he received for queens was never used until the queens had been put into the postoffice; therefore when the weather was unpropitious, or if poor health intervened, the money was at hand, ready to go back with an apology. I am afraid, however, that we have not very many who are as conscientious as this. Now, we do not undertake or agree to be responsible for all delinquencies of our advertisers; but in the present case I wish all who lost money by friend Gray would tell us how much. We do not want long details—just tell us briefly how much money you sent him for which you received no equivalent. His father suggests, in his closing sentence, that he may assist him some; and if our brother who is out of health is really desirous of making good those he has unintentionally wronged, shall we not turn in and help him? He who has poor health certainly should have our sympathies. I know a little more about it than I did a week ago, for I have been having a touch of the grip myself.

There, I have tried to treat this whole matter in a Christianlike way, and in a fair way to all parties concerned. Have I been too severe or too easy with our delinquent friend? Perhaps some of the friends may be able to take the extractor his father mentions; and where the amount he owes is sufficient to cover it, I would advise corresponding with him direct. A. I. R.

MR. EDOUARD BERTRAND.

A BEE-KEEPER, EDITOR, AND AUTHOR.

Among the foremost bee-keepers of Europe, and one who stands high in apicultural circles, is Mr. Edouard Bertrand, editor of the *Revue Internationale d'Apiculture*. While the rest of France has rather held to the old-fashioned straw skeps, Mr. Bertrand, with the assistance of Mr. Dadant, has been slowly infusing into the bee-keepers of that country progressive ideas; and he is therefore, perhaps, the most distinguished bee-keeper of that country or Switzerland. He it was who gave material aid to Mr. Dadant in translating "Langstroth on the Honey-bee," revised by Dadant, into the French language, at the same time adapting it to French people. Some time ago there appeared in the *British Bee Journal* a biographical sketch, accompanied by a half-tone engraving. At our request, Mr. Charles Dadant furnished us with a photograph from which we made a new portrait. The following is taken from the *British Bee Journal* for Nov. 7, 1889:

We have much pleasure in presenting to our readers this week the portrait of one of the most advanced bee-keepers on the continent of Europe, and who is one of the pioneers of modern bee-keeping in Switzerland—that land literally flowing with "milk and honey."

Ed. Bertrand was born in 1832 in Geneva, where he was educated, and resided until he was nineteen years of age. Like many other Swiss he left his native home to make a living abroad, Paris was the chosen place. He remained in business there until 1873. The anxiety he went through during the insurrection of the Commune in 1871 told seriously upon his health, and, not having any children, he decided to retire from business and return to his native land. Here he purchased a property on the shores of Lac Leman, where he could devote himself to his favorite pursuits of horticulture and arboriculture.

It was not long before he became possessed of two skeps of bees with straw caps, such as are used by the villagers, which a friend of his had offered to him, and with these he commenced bee-keeping. Having no other ideas about bees than those he gathered from the work of his compatriot F. Huber, in his *Nouvelles Observations*, he found that the knowledge acquired was not sufficient for practical bee-keeping. The first two or three years of his novitiate were passed in trials and failures without ever harvesting a single pound of honey. He tried, one after the other, hives with snipers, such as the Varembeys, Ribeaucourt, Carey, Christ, etc.; then hives with small frames, like the Berlepsch, Vaudoise, Bauverd, Jarrie, etc., always with the same unsatisfactory results. The neighborhood of Nyon is not very favorable for bee-keeping, and no apiary had succeeded there before him. The honey-flow is of short duration, and therefore more than in other places it was necessary to have strong colonies, an impossibility with the small hives he was using. He became at last acquainted with the works of G. de Layens, *Elevage des Abeilles*, and of C. Dadant, *Petit Cours d'Apiculture*. The methods there described were a revelation to him, and in 1877 for the first time he obtained a good harvest of honey from a Layens hive, which he had placed in an

apiary he had started in the mountains on a small family estate. The following year he changed his hives, partly for the Layens and partly for Dadant, and established a third apiary at Bex.

In 1880 he started a third apiary at Alleveys, in the Jura, which he visited and described in *B. B. J.* for 1883, p. 96. Here he put an equal number of Layens and Dadant hives for comparison. This apiary, which later he gave over into the charge of an assistant, has always given good results in spite of foul brood, which decimated it, but which, however, was stamped out. Not only its first cost of 2500 francs (for hives, building for lodging, and workshop and fences) was quickly returned by the produce, but every year a handsome profit is derived and is divided between Mr. Bertrand and his assistant. Mr. Bertrand supplies at his cost all comb foundation, and takes in return all the wax from cappings and melting of old combs. When sugar for feeding has to be purchased, each pays his share. The assistant does all the

the journal, on condition that he was the sole manager, and undertook to bear all costs. He furnishes the journal to the members at a reduced rate; namely, three francs, whereas the ordinary subscription was four francs; and, in order to remunerate himself, sought subscriptions at home and abroad. At the end of two years the *Bulletin d'Apiculture pour la Suisse Romande* had sufficient subscribers to pay its cost of production; and these having so rapidly increased abroad, especially in France, he changed its title to *Revue Internationale d'Apiculture*. There is no doubt that this journal is the most practical in the French language; and as it is the only one that treats seriously of modern methods, we are not surprised that it is eagerly sought after by advancing bee-keepers.

Mr. Bertrand has also from time to time published several practical works, such as *La Routine et les Methodes modernes, premieres notions d'Apiculture*, in 1882; *Description des meilleures Ruches: Conseils et Notions a l'usage des Commencants*; and in 1883, *Calendrier de l'Apiculteur*. The three last were later combined in one volume, entitled *La Conduite du Rucher*, which has already passed through four editions. Mr. Bertrand has also translated our *British Bee-keepers' Guide-Book*, and is at present engaged on a translation of the last edition.

He has been indefatigable in giving instruction, and from 1884 to 1887 every spring he gave a course of lectures and practical instruction at his apiary. This course lasted six days, and was open free of charge to all. The mornings were devoted to instruction, and the afternoons to manipulating hives. Failing health caused him reluctantly to relinquish them. He still from time to time gives lectures in villages, and gains many converts to modern methods. He is appointed lecturer on apiculture at the Government Agricultural Institute at Lausanne. The acquaintance which we made with Mr. Bertrand some years ago has grown into an intimate friendship, which we hope nothing but death will sever. His persevering industry and indefatigable zeal make him esteemed by all who know him, and it is to him that the French-speaking portion of Switzerland owes the present position it holds with regard to bee-keeping. We hope he may continue for many years to enjoy his quiet retreat at Nyon, and pursue his favorite occupations of bee-keeping and horticulture. A full account of Mr. Bertrand's apiaries will be found in Vol. XIII., *B. B. J.*

Mr. Dadant adds the following:

Since the publication of the works mentioned above, Mr. Bertrand has published the 6th edition of his *Conduite*; a translation in French of the *Honey-bee* of Cowan; and, after helping me to publish *L'Abeille et la Ruche*, he has published *La Construction economique des Ruches Layens*, and just now the same work on the Dadant hives.

EDOUARD BERTRAND.

work, and all swarms are the property of Mr. Bertrand, who supplies the hives and appliances. This apiary consists of fifty hives.

In 1876, when the *Societe Romande d'Apiculture* was started, Mr. Bertrand was elected secretary, a post which he occupied for seven years. On several occasions he has been elected president of this society. This post can be held by the same person only two years consecutively. He has also been the treasurer since 1879.

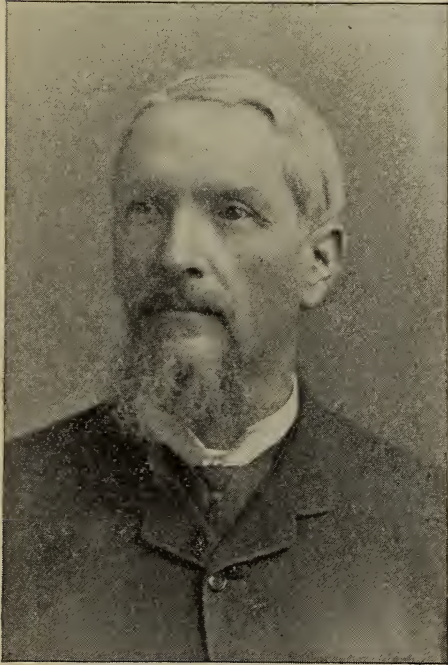
In 1876, the society having recognized the desirability of having an organ which would place its members in communication with each other, and inform them of the advances made in bee-keeping, Mr. Bertrand offered to edit

THE DOVETAILED HIVE AND LOOSE FRAME.

SUGGESTIONS AND CRITICISMS FROM J. H. LARABEE, OF THE MICHIGAN AGRICULTURAL COLLEGE.

Friend E. R. Root:—We have been trying some of the Dovetailed hives; and although, because of the poor season we could not test them to our entire satisfaction, I will suggest a few points in their construction whereby they might be altered to suit me better.

Horace Greeley said that the average news-



paper article should be cut in two in the middle, and the first half thrown into the waste-basket, the last half published, so I will make a line here where you can divide this.

In the first place, the follower, or division-board, is too thin and frail. I like something a little more substantial, that will hold a good stout nail; and those cleats at the ends can be nailed on in two or three ways, so as to destroy their usefulness by closing the bee-space at the ends so that they are soon fixed.

Then I don't like the end-bar of the "swinging" frame. It is "too thin;" and the slit at the top to admit the comb-guide makes it almost impossible to nail firmly this end-bar to the top-bar to maintain the frame a perfect rectangle. Just go out into the shop where those heaps of frames are, Ernest, and nail a few and tell us how you would do it. We don't use the comb-guide, as we like full sheets of foundation in wired frames.

Another thing. Are you sure that $\frac{3}{8}$ inch is the proper and necessary thickness for the top-bars of frames? Isn't the main idea in having thick top-bars to keep the frames from sagging? and won't $\frac{3}{8}$ inch do it? Is Dr. Miller doubtful that $\frac{3}{8}$ inch will prevent sagging, or does he doubt for other reasons? I like the wide top-bars. I have, at home, about 1500 frames with top-bars a plump inch in width, and like them. I have the more appreciated their value since I have handled frames this summer with $\frac{3}{8}$ -wide top-bars spaced $1\frac{1}{2}$ inches that had to be cut from the adjoining frames with a jack-knife before they could be removed.

Again, were I buying one hundred or one thousand of these hives for my own use I should prefer to pay 10 or 15 cts. per hive more, and have the tops and bottoms made of the clearest and best pine obtainable. Nearly every one of the covers we have here has warped so that a bee could pass beneath them.

Now, if I have found fault with the hive it is because I like it. I believe the ideal hive will be obtained by a slow process of evolution rather than by brilliant invention. The first great step was taken by father Langstroth; and, as has been the case with all other great inventions, when once the first principle was discovered, the remainder of its progress has been step by step.

I am thankful that we have such large dealers in bee-supplies as Lewis, Falconer, and Root, each one of whom is willing to sacrifice present gain for the ultimate benefit of the pursuit, realizing that their lasting prosperity depends on the success of bee culture as a permanent source of livelihood. On the enterprise and conservatism of these and other large firms depends the responsibility for the future progress of apiculture to a large extent.

J. H. LARRABEE.

Ag'l College, Mich., Aug. 19.

[Thanks. Such sort of criticisms we invite. The division-board has been made heavier since those we sent you; and the drawings that will accompany the new hive will show how to nail them so that there can be no mistake. We have no complaint of the end-bar of the loose frame—or, as you call it, a swinging frame. I know, after they are nailed together, or, rather, in the nailing, there is a tendency to depart from the rectangular; but many bee-keepers have a sort of nailing-form that holds the frame securely while being nailed. I do not quite see why the slot for the comb-guide in the end-bar weakens the frame.—No, I am not sure that $\frac{3}{8}$ is the necessary thickness; but I know it is sufficient, and prevents all sagging, and at the same time does prevent burr-combs. Top-bars for loose frames we do not dare to make

shallower, although we have done so on the Hoffman. I have observed, however, some of our top-bars $\frac{3}{8}$ inch thick and one inch wide have already begun to sag perceptibly. But our top-bars $\frac{3}{8}$ inch thick are as true as a straight-edge, although they have been in use for over two years. I do not wonder that you do not like top-bars $\frac{3}{8}$ inch wide. I hope you will get Prof. Cook and the rest of them to adopt a wider and thicker bar.—In regard to lumber in the hives, we endeavor to put in nothing but sound knots, with as much clear lumber as we can get in ordinary lumber we use for hives. Lumber perfectly free from knots is just as liable to warp and twist as that which is not. A few years ago we offered to furnish Simplicity hives at a slight additional cost, made of perfectly clear lumber; but there were so few calls, that it did not pay us to keep the notice in the price list. We take it that bee-keepers generally are satisfied with beehive lumber, even though it is knotty, providing said knots are sound. It is possible, in the hurry of our season, that you have gotten some extra poor covers and bottoms, and we should be glad to send you better ones. Ours do not behave in the way you speak of. They are all bee-tight—every one of them. There are a few that show a little tendency to wind. The tendency is slight, however. I believe you are right. Large supply-dealers are, as a rule, quite willing to sacrifice present gain for the ultimate good of their patrons. When the thick-top-bar rage, as well as fixed distances, came up, we were obliged to modify some expensive machinery—or, at least, in some cases, put in other pieces. All of this sacrificed present gain, but we believe it will result in ultimate good.]

TESTING THE DIFFERENT BEE-ESCAPES.

THE PORTER COMES OUT AHEAD.

Believing, as I do, that the bee-escape and queen-excluder are bound to make quite a revolution in the production of comb honey, I thought perhaps an article on that subject might be acceptable.

First, I will give my mode of constructing a simple and cheap bee-escape which can be made by any one who has the tools at hand. It is constructed on the double-cone system, and therefore is nothing new, I suppose, but may be somewhat easier to construct than some others. The one I shall describe is for the Simplicity hive, for taking off extracting-supers. First, I make a rim the same as for a cover. In fact, it is a cover, only I use $\frac{1}{2}$ -inch lumber for the top, and bore one to five one-inch holes through it. I think one or two as good as more. I now take my former for making Doolittle queen-cell protectors, and make a lot of cones, and bend the corners out at right angles to the perpendicular of the cone. Drop one through the hole from above, and fasten the corners with small tacks. Turn the cover over and place another cone over this one, tacking the corners to the under side of the cone. This leaves the apexes of the cones $\frac{1}{2}$ inch apart, and room for bees to pass between the two cones; thus, if the bees enter the first cone they are apt to miss the inside one. Those who are not familiar with the Doolittle cell-protector can refer to the A B C or back numbers of GLEANINGS to see how they are constructed.

The first one I made for trial, I put five double cones in the board; afterward I made a number with three double cones—one double cone, and one with one single cone. The circumstances under which they were tested

varied somewhat, as some of the hives had no excluders, and consequently brood in upper story, and I find that we need not expect any escape to work satisfactorily where this is the case. The one single cone did very well. One double cone worked poorly; but, perhaps, this was owing to circumstances or the disposition of the bees. Three double cones did very well where there was a queen-excluder, in nearly every case. The Dibbern star, sent out a year or two ago from the Home of the Honey-bees, did poorly, though there was a small patch of sealed brood in the upper story. But when I came to the Porter spring it just "took the cake." As nearly as I could tell, there were about fifteen bees in the super. As the darkey said, I counted all but one, and she frisked around so I could not count her. All were put on about 6 p. m. and supers taken off about 9 next day. The supers were carried into the honey-house without brushing off the bees remaining, and placed close to one window having a bee-escape as shown on page 561, GLEANINGS for July 1. The sash were removed to allow the bees to alight directly on the screen, and all combs containing no brood were vacated in a short time.

I could now lay off my hat, roll up my sleeves, and go to work extracting in a businesslike manner, instead of running in and out, carrying combs in buckets, brushing bees, getting stung, etc. We did not have enough No. 1 honey-boards to reach round for extracting colonies; but we do not intend to be without a full supply in the future. I believe that the time is coming when few extensive producers of extracted honey will be without them. For comb honey, the honey-board is not needed; and while I am not yet converted to the Hoffman frame, I would recommend the thick-top-bar frame, and the abolishing of the honey-board for comb-honey production. We get along without honey-boards, even over the metal-cornered frames, with $\frac{3}{8}$ top-bar; and in only one case did the queen enter a few sections.

To producers of extracted honey I would say, use the No. 1 queen-excluding honey-board. Then use bee-escapes to rid the supers of bees; and if a few remain, place them in the honey-house near a window with a bee-escape, and do away with brushing bees off the combs, and the consequent stings and hard work; for there is nothing more laborious about the apiary than bending over, shaking and brushing bees off the combs.

I now wish to name one of the advantages of the Porter spring bee-escape over others; viz., being instantly changeable from one board to another. With the Simplicity hive, an escape-board for removing comb honey should not be larger than a T super, so that an empty super may be placed over the brood-chamber, the escape-board over this, and the full super on top; but for removing extracting-supers this is not practical, as the board should have a rim to fit the hive-body; and with a supply of both kinds of boards, one set of escapes will do for all.

I tested two escapes—the Dibbern star and my three double-cone—to see how many bees would return after leaving them on about 24 hours. I found that many bees would return through the Dibbern star; over the three-cone escape the robbers had gained an entrance between the escape-board and the upper story, so that I could not tell. There were quite a number of bees in the upper story, but most or all of them seemed to be robbers. I did not try the Porter on the back-action principle, as I considered it of no use to try, for the bees have no crowbars with which to pry the springs apart and return.

I may tell you later what a colony of bees will

do, with the queen confined to seven Simplicity frames, provided there is room for expansion and contraction. S. E. MILLER.

Bluffton, Mo., Aug. 10.

[Thanks, friend M. The evidence is accumulating that there are great possibilities in the bee-escape; and it begins to look now, at least for many of us, as if the old nuisance of shaking and brushing combs could be dispensed with. I presume, for very large apiaries, especially for out-apiaries, it will be necessary to brush and shake the combs, for extracting; but certainly in our home yards the bee-escapes may be used to great advantage; and they may also in out-apiaries, providing one can afford to drive to an out-yard the night before, and put on bee-escapes; then the next morning go down and take off the honey. If the bee-escapes are already at the yard, and one has a good Victor bicycle, the time of going to and from the yard will be reduced to a minimum. This is no idle theory, for I have had experience right in this line—not in putting on bee-escapes at night in an out-yard, but in making long trips in a short time. While I can make a trip to our yard, seven miles away, in 30 minutes, I never take over 45; and I am not fatigued, either, for a good day's work.] E. R.

CLOSED-END FRAMES IN A TIGHT-FITTING HIVE.

DOES SWELLING, THE RESULT OF MOISTURE, CLOSE UP THEIR END PLAY IN THE SPRING?

Ernest Root, in GLEANINGS for July 15, contends that, the deeper are close-fitting frames, the greater is the difficulty of manipulating them in a tight-fitting case, *a la* Heddon. He says that deep frames catch and draw out by "hitches," as in the case of a bureau drawer if it fits snugly and is not pulled out perfectly straight. I am inclined to agree with Ernest in this matter; not so, however, when he says that the right amount of "play" or space can not be maintained between the ends of the frames and the outside case on account of the effects of moisture. Lumber does not swell *endwise*; and by halving together the corners of a hive in such a manner that the inside of the end pieces comes against a shoulder cut in the ends of the side pieces, the hive can never be any smaller *inside* in the *direction of its length*, no matter *how* much the lumber swells. Now for the frames. Their top and bottom bars extend their extreme length, and can never be any longer from swelling. The ends of the top and bottom bars fit into notches cut into the ends of the end-bars, or uprights, and are nailed fast, the nails being driven within $\frac{1}{8}$ of the end of the top or bottom bars. The end-bars are $\frac{3}{8}$ thick, and perfectly free to swell in either direction from where they are fastened by nailing. In other words, they can and do swell both ways from the nailing. Outside of the nailing, at each end, is $\frac{1}{8}$ of wood that can swell in such a manner as to lessen the distance between the ends of the frames and the outside case. This is all the wood there is about the *whole* hive that can swell in such a manner as to lessen this space. One-fourth inch of ordinary pine wood will never swell until it is more than $\frac{1}{8}$ thick, while $\frac{1}{8}$ play can be allowed if necessary.

My Heddon hives and frames are made exactly as I describe them. When I put them into the cellar in the fall I always loosen up the screws, as I well know that the end-bars will swell *crosswise* of the hive. Ordinarily the screws press the frames back about $\frac{1}{8}$ from the sides of the hive. When taken from the

cellar the end-bars have sometimes swelled so much in some hives that this $\frac{1}{8}$ space is entirely closed up; but between the *ends* of the frames and the *ends* of the outside case there is ample space to allow the manipulation of the frames. I allow only $\frac{1}{16}$ "play," yet the blade of an ordinary case-knife might be easily thrust down between the ends of the frames and the ends of the case in the most swelled set of frames I ever saw. If hives and frames were made as I have described, and $\frac{1}{8}$ play allowed, they might be sunk in the millpond a week without the frames being swelled against the ends of the case—it couldn't be done.

[The above is an editorial that appeared in the *Bee-keepers' Review* for Aug. 10, page 212, that perhaps needs some reply. In the first place, I will say that Heddon hives, made in the manner Mr. Hutchinson has here described, would be practically proof against frames sticking, because of swelling either of the ends of the hives and the ends of the frames; and so far I agree with Bro. Hutchinson. But the hive we have is made quite differently. I believe it came from Mr. Heddon in 1886 or '87. The ends are halved $\frac{3}{4} \times \frac{1}{2}$, and are nailed in such a way that $\frac{1}{2}$ inch at each end may swell toward the frames. The frame-ends ($\frac{3}{8}$ in. thick) are dovetailed to the top and bottom bars. This gives $\frac{3}{4}$ inches of wood that may swell, instead of $\frac{1}{8}$, as would be the case with Mr. Hutchinson's hives. Mr. H. says lumber does not swell endwise. I know this is a current impression. But let him or anybody else try the experiment, and it will be found there is a *slight* increase in length in dry to wet lumber.

I have no accurate data before me to show just how much difference there is in shrinkage *widthwise* from wet to dry lumber; but every year we buy up immense quantities of basswood lumber, and we always order it sawed $2\frac{1}{8}$ thick. This will shrink to two inches, and sometimes a little less. I am well aware that basswood will shrink a little more than pine; but in $1\frac{1}{4}$ pine there would be a shrinkage from dry to wet of somewhere about $\frac{1}{16}$ inch. Brother Hutchinson will say there is yet a whole $\frac{1}{8}$ inch to be taken up by swelling before the frames are wedged tight. Not so. If he will examine his frames I think he will find that they are a trifle diamond-shaped. This tendency, however, will be so slight as almost not to be detected by the eye; but if you place a square on them, you can see. When these frames are filled out with combs, or are wired, they are practically rigid. Several of the Heddon frames in our hive were all the way from $\frac{1}{16}$ to $\frac{1}{8}$ from square, so that the diagonally opposite corners of them touch the ends of the case. Now, a very *slight* swelling would make these frames *fast*. But there is another factor comes in here. I find that, in close-fitting frames, propolis will somehow get down in between the backs of the frames and the ends of the hive. Now, in cool weather in early spring propolis is hard and unyielding. Taking into account the manner in which our hive is made, and the fact that some of the frames are not absolutely square, no matter how perfect their sawing, and the propolis accumulations that will wedge in, shrinkage and swelling *do* have quite an effect. The frames of our Heddon hive were wedged tight *endwise* from swelling last spring. After it warmed up they became loose. But the matter of moisture does not begin to assume the importance in the way of an objection that inaccuracy of manufacture has upon the close-fitting frame. As I explained in my original article on page 595, unless there is perfect accuracy of workmanship, or unless manufacturers invariably go by the same gauge, which

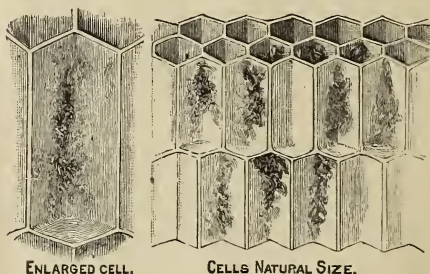
they do not in standard sizes, the close-fitting frame would not be made interchangeable with hives throughout the country, like frames having a bee-space back of the end-bars.

FOUL BROOD.

HOW TO TELL WHETHER COMBS HAVE HAD IT.

Our readers will remember that, some time ago, we gave an illustration of foul-brood comb—comb that had, at some previous time, held the diseased brood. We sent samples of the comb to our engravers, but they did not at the time succeed in getting Mr. Taylor's idea. We requested him to send another sample, and we would try again. We made another engraving, which, though not entirely satisfactory, is perhaps sufficiently accurate to illustrate the idea which friend T. wishes to bring out. To be able to recognize promptly combs that have once held the disease is a very important matter indeed. Mr. Taylor writes:

Friend Root:—I send you a rough pencil-sketch, giving something of my ideas of how it should appear. I also send you a piece of comb containing the diseased and dried-up larvæ. To see the dead larvæ to the best advantage, stand with your face toward the point of the compass where the sun is, and hold the comb down in front of you, with what was the lower



edge away from you, so that the sun lights up the upper side, and so that your sight strikes across it at an angle of 30 or 40 degrees. This will make the presence of the disease very evident.

R. L. TAYLOR.

Lansing, Mich., June 1.

[In a former article Mr. Taylor said: "The dead brood is entirely dried up—mere scales, almost the color of the comb itself, lying fast to the lower sides of the cell, and drawn back more or less from the opening." In the sample of comb sent, there seemed to be a sort of residue a little darker in color than the comb itself, lying fast to the lower sides, as explained. It is, perhaps, exaggerated a little bit in the engraving; but the purpose is to show about how it lies on the bottom sides of the cells, or what are the bottom sides when in the hive. It seems these scales are nothing but matured masses of foul brood dried up, and which the bees are loth to clean up.]

THE NORTH AMERICAN AT ALBANY.

TO THE VERMONT BEE-KEEPERS.

The North American Bee-keepers' Association will meet soon in Albany, N. Y. A year ago I was making calculations to attend this meeting; but, how little can we foresee the fu-

ture! However, my interest in its success remains. I want the bee-keepers of the east, and especially of Vermont, to show the world that they are not behind the times. I wish that every person who has stood by the Vermont Bee-Keepers' Association during the past three depressing seasons would find time and disposition to attend this meeting. Many men of national bee reputation will be there; the meeting will probably hold three days, and Albany is a city in which there is much to see. You have had a good season this year. The farm crops have all been good, the rain plentiful, and all nature has done her best. Now take a rest and holiday by visiting Albany during the time of the North American. All the great bee-men of Central and Western New York are preparing to go. Massachusetts will not be far behind, and there will be some there from the great West. E. R. Root, and perhaps others from Medina, will try to be present. Next year it will probably be held in the West, and the good opportunity may not come again; so, I say, attend and *talk*, and make this the best meeting of the North American, and make President Elwood and Secretary Dadant happy. I should like to see twenty bee-keepers of Addison County express their intention to go, to President V. V. Blackmer, of Orwell, Vt., when I am sure he can make arrangements for reduced rates from some point. I was sorry the Vermont Bee-Keepers' Association did not affiliate last winter with our International Association, but trust they will show the world they still live.

J. H. LARRABEE.

Agricultural College, Mich., Aug. 15.

SHIPPING COMB HONEY.

RECENT RULINGS BY THE WESTERN CLASSIFICATION COMMITTEE.

After our editorial in regard to the above subject appeared in our Aug. 1 No., page 614, the Miller Bros. wrote to J. T. Ripley, of the Western Classification Committee, The Rookery, Room 733, Chicago. To this J. T. Ripley replies:

Miller Bros.—Gentlemen:—Answering your favor of the 8th inst., I think if your shipments of honey in comb are securely packed and boxed, and marked conspicuously, "Glass, handle with care," on the outside of the packages, that no difficulty should be experienced as regards breakage. Large quantities of glassware are constantly being handled by transportation companies upon which the breakage is insignificant.

J. T. RIPLEY, *Chairman*.

Chicago, Aug. 10.

Miller Bros. promptly forwarded the correspondence to us, and to this our business manager, Mr. Calvert, replied as follows:

J. T. Ripley, Chairman Western Classification Committee:—

Dear Sir:—In looking over the recent rulings of the Western Classification Committee we noticed one or two rulings in regard to items affecting our industry. We mail you a copy of our publication, *GLEANINGS IN BEE CULTURE*, in the August 1st number, p. 614, of which appeared the clippings below.

GLASSED CASES OF COMB HONEY MUST HAVE GLASS COVERED FOR SHIPMENT.

Among the recent rulings of the Western Classification Committee we find the following: "June 23d.

Honey in comb, packed in boxes having glass fronts, should not be received for shipment unless fronts are fully covered and protected." From our experience this ruling will work mischief unless honey is crated as outlined on p. 643. If comb honey is so crated I think it will pass under the ruling, and it was no doubt intended to enforce such crating or protection that the ruling was made. If, however, instead of crating your honey you simply cover the glass with a board, as you will no doubt be obliged to do unless the ruling is changed, your honey will fare worse than before. When, by means of the exposed glass, the freight-handlers can see the contents they are more likely to handle with care than if in a solid box; at least this has been our experience. From this point of view the ruling is unjust to bee-keepers; and if they desire to have it changed, the person to write to is J. T. Ripley, chairman, Room 733, The Rookery, Chicago, Ill. Remember, this ruling applies on the roads west of Chicago and St. Louis, not in the territory east of these points.

In response to this you have doubtless received some letters from honey-producers. Your answer to one, Miller Bros., Bluffton, Mo., under date of Aug. 10th, press copy of which we attach, has been forwarded to us. Your statements there would seem to indicate that you had more concern for the glass inclosing the honey than for the honey itself. Now, one of the chief objects that bee-keepers have in putting glass on the cases containing honey is that parties handling the cases can see what they contain, and will thus be induced to handle them with greater care. Your statement, that "large quantities of glassware are constantly being handled, upon which the breakage is insignificant," it seems to me does not have any bearing on the case. This glassware is safely packed in hay or straw, and will stand reasonably rough handling; but honey in the comb will not stand such rough handling. If the honey is roughly handled, the combs break down, and it begins to leak, and the transportation companies have a worse job on their hands, oftentimes, than they realize. Every thing that will contribute to the careful handling of comb honey should be done, it seems to me; and your recent ruling, that the glass must be covered before such honey is received, looks to me like a step in the wrong direction, for our experience has been that honey so covered has not received the careful attention that it does when the glass exposes the honey to view. Let the case be marked ever so plainly, it doesn't have the effect that a view of the article itself does. Then, too, your advice to mark the packages "glass, handle with care," it seems to me, a little questionable, for the contents of the packages is honey, not glass. If the packages are to be marked glass, what is to hinder billing the stuff glass, and shipping on a lower rate? In the interests of bee-keepers, as well as of the transportation companies, we think the ruling ought to be changed.

We desire, also, to call your attention to another item in your rulings. Under date of July 6th, you incorporate a new item in the classification called "bee-comb stuff," and, in parenthesis, artificial honey-comb. This name is misleading. I suppose you have seen in the papers accounts of comb honey being manufactured without the aid of bees, all of which is entirely false. We inclose you a card which we have distributed widely for the last four or five years, and have challenged such slanderous reports for proof, but no proof has as yet been forthcoming. In view of these slanders, the wording of this item in the classification is misleading; and because of this misleading, it is unjust. We would suggest that you change it to the name that all manufacturers of the article give it; namely, comb foundation, or, if you choose, "bee-comb foundation." Every bee-

keeper knows what that term is, and the agents having any thing to do with it will soon learn it.

Very resp'y.

A. I. Root, per J. T. C.

In reply to the letter above we have received this very gratifying letter. We have been granted some of the points we sought for, though not all:

Mr. A. I. Root:—Receipt of your favor of the 15th inst. is hereby acknowledged. I am pleased to note the demonstration which you appear to make, that comb honey can be safely transported if properly packed by crating. Evidently, such shipments might be inclosed in boxes, thus meeting the conditions of the ruling referred to, and protect shippers from loss and damage. If, in your judgment, it would be better to mark such packages, "Honey in comb, this side up with care," or, "Handle carefully," there is, of course, no objection to such marking. I have changed the wording of the article referred to by you as "Comb Foundation," and it will appear, in the next sheet of rulings issued, as "Bee-comb Foundation" (beeswax in sheets), which I presume will meet the point raised by you. There was no intention to misrepresent or do injustice to any interests by the wording originally adopted.

J. T. RIPLEY, Chairman.

Chicago, Ill., Aug. 18.

Mr. Calvert replies to this as below:

J. T. Ripley, Chairman Western Classification Committee:—

Dear Sir:—Replying to your favor of the 18th, we wish to thank you for changing the item of "Bee-comb Stuff" to "Bee-comb Foundation" (beeswax in sheets). We did not intend to convey the idea that your former wording, which conveyed a wrong impression, was done with the intention of injustice, but that it would be injustice to allow it to stand so, when advised of the facts.

With reference to your ruling on comb honey in boxes with glass fronts, we don't gather from your letter that you propose any change in this. It may be that you intended to allow honey, crated in the manner we outlined in the clipping sent you, to pass as though it were boxed. One of our correspondents writes that this will do very well, when there is sufficient in the shipment to crate up in this way; but when only one or two cases are to be sent it can not well be so crated, and we are still of opinion that it would go much more safely without the glass being covered, even if it is not crated; and if crated honey is to be passed, the ruling will have to be changed somewhat so as to cover it.

Very respectfully yours,

A. I. Root, per Calvert.

Medina, O., Aug. 20.

Mr. Ripley replies:

Mr. Root:—Answering your favor of the 18th inst., I intended to convey in my letter of the 18th, that, if shipments can be crated and then boxed they could be safely carried without having any exposed glass surfaces. I still think the provisions of my ruling are reasonable, and that, with a slight exercise of ingenuity on the part of shippers in packing, they can be complied with to the advantage of all parties interested. Packages with exposed glass surfaces are very objectionable from a transportation standpoint, for reasons that should be obvious.

J. T. RIPLEY, Chairman.

Chicago, Ill., August 21.

FIXED DISTANCES; SULPHURIC ACID FOR RENDERING WAX.

C. P. DADANT ENTERS A PROTEST AGAINST SOME LATELY DEvised THINGS.

Friend Ernest:—I should like to say a few words to help Bangs against our good friend Dr. Miller in regard to the closed-end frame. Bangs says he wants to have a chance to space the combs to suit himself, and the doctor seems to think he has "got" him when he proves to him that he spaces all his frames at exact distances. The trouble we found with fixed distances was, that we could not change one frame for another, or turn a frame wrong end foremost, when we used them. I have not the least doubt that, if you always put the frames back into the same hive, and in the same places that they formerly occupied, you will find no trouble in fixed distances. But in that case, where is the advantage of using movable frames? Suppose we have a weak colony short of stores, and wish to help that colony with a heavy thick frame of honey from another hive. With the loose frame we shall have no trouble; but with these fixed distances we shall very often mash the combs on both sides of the thick comb so given. Dr. Miller tells Bangs that he will crush as many bees with burr and brace combs as he will with the closed end; but I say that, if your hives are of equal age, you will find as many burr and brace combs in the one as in the other.

You say that, in your Shane yard, you have but one hive with burr-combs. And, pray, would you have very many of these in this apiary, on loose frames, if the hives were like these, only one year old? It is not in the first one or two seasons that one finds these impediments to neat work. It is when the hives have been long in use by the bees, and opened but little by the bee-keeper, and especially when the bees have found themselves crowded for room. There is no doubt that closed-end frames have some advantages that will never be found in the open end frames, the main one being their greater warmth for winter; but for the everyday manipulations of practical bee-keeping, queen-rearing, artificial swarming, strengthening and helping weak colonies from stronger ones, uniting, and the thousand and one manipulations that are so often repeated in a practical apiary, we can not see how any one can hesitate between the two styles.

One word about horizontal wiring. So far as we know, the credit of originality is due to friend J. Vandervort, in whose apiary I saw this used first, and we only imitated him. It is certainly much superior to vertical wiring.

One more word on another subject. I see that you are advising bee-men to use oil of vitriol to render their wax. I believe it is a mistake, for we have always noticed that beeswax rendered thus had an unpleasant smell, and we believe its general use would have a tendency to render the wax unfit for foundation. You will remember that we told you that we used it only for our residues, and such wax as *could not* possibly be cleaned otherwise; but we are very particular to use this wax only in a very small proportion to the water-melted wax. The fact is, we do not use this method on more than two per cent of all the wax we handle, and we consider wax thus cleaned as very much inferior to that melted by the ordinary methods. We should very much object to buying any beeswax produced by bee-keepers, rendered in this way, for the sweet balmy odor of the hive is all taken away by this process. We are satisfied that a part of our success in foun-

dation-making is due to the fact that we used this way of cleaning less than several others to our knowledge, thus preserving the natural bee smell in the greater part of the foundation.

Hamilton, Ill., Aug. 22. C. P. DADANT.

[Thanks, friend C. P. I hope it is not my policy to demolish every thing in the way of objection to fixed distances; but I can not help saying that all those who have tried fixed distances, such as Elwood, Hetherington, and many others, do not experience that trouble in interchanging. Indeed, I saw Hoffman and Elwood both interchanging their combs; neither have we run across any of this unpleasant bulging, except where a frame of foundation was inserted in the height of the honey season, between two combs. The bees would bulge the latter into the frame of foundation. This does not prove serious, because, when we put the two fat sides of two combs together, the bees will shave them down, and reduce every thing to an even thickness. This we do every year with loose frames to restore them to normal thickness. Still, as I have said a number of times before, I know there are many who do not like fixed distances, on account of their methods of working and habits of thought. I am glad, therefore, you have stuck up for our friend Bangs. Some, like yourself, prefer a large frame, while others think a Langstroth is all-sufficient; so with regard to fixed and unfixed distances.

Yes, I realize all you say, that top-bars for the first season, either thick or thin, are not as apt to have burr-combs as when they have been in use a number of seasons. But, friend Camille, I have been trying both thin top-bars, $\frac{1}{8}$ inch wide, alongside of thick top-bars one inch wide. After two years of use, there are burr-combs built on top of the thin bars, but none on the thick ones. Nearly all of the thin and narrow bars that we have put into the apiary have burr-combs—at least a few—the first season; and, besides all that, there have been reports from those who have tried thick and wide top-bars seven or eight seasons, and have had no burr-combs. Hoffman had frames that I saw that had been in use some twelve or fifteen years, quite free from these little nuisances on top.

Although we may disagree in regard to fixed distances, we join hands on your method of wiring. I am glad to know that the credit of originality belongs to Mr. Vandervort. Is he the one who discovered that drawing the wires loose makes all the difference between success and failure?

As you are the largest foundation-makers in the world, it may be well for us to heed your warning and go a little slow in this matter of rendering wax with sulphuric acid. So far we have used it only in our dirtiest refuse, such as we could not render in any other way. We have tried, however, a few very black cakes of wax, to see if we could not lighten them up, and the result has been highly satisfactory as to color. Since you have spoken of it, I notice a little odor, though very slight, clinging to the wax so treated; but I think that, if it is melted up into foundation again, this odor will disappear. In the first place, the acid is diluted some 300 or 400 times—so weak, indeed, that the hands can be dipped into it with impunity, and I do not know but we could drink quite a quantity of it with no injurious results. It certainly can not be poisonous to man or to bees any more, it seems to me, than soap used for lubricating rolls in foundation-making. We find that there is a very slight residue of particles of soap left on the foundation, and this is not objectionable to bees.—See Editorials.] E. R.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 192. *Do you think you would have been richer or poorer to-day if you had never had any thing to do with bees?*

Poorer.
California. S.

R. WILKIN.

I don't know, but I am going on with the bees.
Illinois. N. C.

J. A. GREEN.

Been a deal poorer, and not nearly as fat and well.

Illinois. N. W. C.

Mrs. L. HARRISON.

I should have been poorer in wordly goods, and much poorer in pleasurable experiences.
Michigan. C.

A. J. COOK.

I am sure that the bees have increased my possessions, as I am richer on account of the bees.

Wisconsin. S. W.

E. FRANCE.

I believe I should have been poorer; for, till this season, my bees have been a source of income, and the attention given them has not materially interfered with my other business.

Ohio. N. W.

A. B. MASON.

Well, that's an awful question. I certainly could not have been poorer. As to whether I should have been richer or not, the Lord only knows—I don't.

New York. E.

RAMBLER.

There is no "thinking" about it, when we know the result. I have always realized a good interest on my investments and troubles. There is no living in it except for specialists, unless a large number of colonies are kept.

Louisiana. E. C.

P. L. VIALON.

We certainly can not tell; but what we now have was nearly all made from the bees. It is true, that we are supply-dealers; but up to 1883 it was our honey crops that gave us profits. Our honey crop of 1883 netted \$2800, labor and expenses paid.

Illinois. N. W.

DADANT & SON.

That depends upon the success I might have had in some other kind of business. I might have had more money and less knowledge of the laws of nature, and perhaps less enjoyment, had I never kept bees. Dollars are not the only riches we should strive for while passing through this stage of eternity.

Vermont. N. W.

A. E. MANUM.

A question like the above reflects suspicion on the pursuit of bee-keeping, but amounts to nothing. Apply the same question to any branch of home production, as, for instance, wheat culture, corn or potato production, hog, cattle, or sheep raising, and see what an amount of blasted hopes you will stir up. We pray for better times.

Ohio. S. W.

C. F. MUTH.

Richer! Almost every one thinks he would have made more money with less work if he had gone into something else, no matter what his occupation. We know of more thorns in our own pathway, because it is better known. It is strange that bee-keepers do not speedily become rich, when the bees work for nothing

and board themselves, and all the bee-man has to do is to exchange the money for money. Either he doesn't get enough honey, or he exchanges it for too little money.

New York. C.

P. H. ELWOOD.

That kind Master, who is ever willing to guide the plans and lives of those who wish to be guided by him, made it very plain to me that I ought to take up bee-keeping. Such being the case, I feel sure that, in some respect, it has been to my profit to do so, although the amount of money I have realized from it has not been large.

Ohio. N. W.

E. E. HASTY.

The terms richer and poorer come to different persons with widely different meanings. I've never made much money with the bees, and yet I feel *well paid* for all the hard work and care bestowed upon them. It would be indeed a sad state of affairs if money were the only compensation we get for our labors.

Ohio. N. W.

H. R. BOARDMAN.

Well, I declare I don't know. I have done better out of the bee-business than 99 out of 100; but as I begin to pay attention to other lines of business, I begin to think perhaps I should have been better off if I had never seen a bee. I find that the same amount of well-directed thought and energy in other lines of business will turn out as much or more money than can be realized from the production of honey and bees.

Michigan. S. W.

JAMES HEDDON.

Thoughts about such a matter amount to but very little. The destiny of all is shaped by an all-wise Providence, and happy is the man who is content with his lot after striving with all his powers to make his chosen pursuit a success. I might have been richer. I might have been poorer. I am thankful to my heavenly Father for what I have, and still more thankful for the good health and the high aspirations (aspirations that lead out toward God) which have come to me while being permitted to work with this wonderful part of his creation.

New York. C.

G. M. DOOLITTLE.

None of your business. Oh! you "didn't mean to be impertinent"? Well, if you mean the amount of money, I'd have been a good deal richer if I'd never seen a bee—that is, if I'd been alive now. But I don't crave any sympathy. I'm no pauper. I have one of the happiest homes, one of the best of wives, and I don't know any other business that would let me have so much time with either of them. I have clothes enough to keep me warm, and more food than I can eat. I've had lots of fun with the bees, and am healthier and younger than I was 25 years ago. I'm expecting a good time while I live, and a better one afterward. What's money to a man who can't stay home to enjoy his best earthly treasures? How rich does a millionaire feel, with a bad liver and a sour stomach? Yes, I'm richer for the bees.

Illinois. N.

C. C. MILLER.

What a question! Who is sufficient for these things? What *might* have been is a sad refrain, and has had an echo in the hearts of most of the human race. A good deal of destiny seems at times to hang on a very small pivot. A few words seem to have decided the fate of Napoleon; the swarm of bees, that A. I. Root hired the man to catch for him, carried lots of fate on their wings as they went over his head. In my case I certainly became no poorer by getting bees 30 years ago. When I started house-

keeping I regretted that I had not sufficient means to buy a good farm, that I might be a farmer; but, not having the money to buy largely, I bought a small place and kept bees. Time has satisfied me that bee-keeping in my case was preferable to farming.

Wisconsin. S. W.

S. I. FREEBORN.

[I would call particular attention to the answers given by friends Muth, Elwood, and Miller. It is true, as Mr. Muth says, you can stir up blasted hopes in almost any industry by touching the right chord, and bee-keeping is no exception. It is also true, that, as Mr. Elwood remarks, almost every one thinks he *would* have made more money if he had gone into something else. Dr. Miller says, very truly, "What is money to a man who can't stay at home and enjoy his best earthly treasures?" When we take up the question as to whether bees pay, we need to consider something besides the mere matter of dollars and cents. Dr. Miller thinks he would have been richer—that is, *if* he had been alive. It is worth something to *be alive*, to have health, enjoyment, and fun; and where in this wide world can we find any industry that will afford any more diversion, more field for study, and more opportunity for real fun and *health*, than bee-keeping.]

E. R.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

IS THERE ANY WAY TO PREVENT OR CONTROL SWARMING WHEN RUNNING FOR COMB HONEY?

Is there any way to prevent swarming or to control it to some extent in working for comb honey? My bees are disposed to swarm, and do nothing but swarm two and three times a week. I have ten colonies in Simplicity and Dove-tailed hives. We returned swarms immediately, and removed two frames of brood from the center, and replaced with frames of foundation, cutting out all queen and drone cells, and they would swarm again in two days. Our hives are all made eight-frame by the use of dummies. We enlarged the Simplicity to ten frames, cutting all cells, and still they would swarm in two days. We have left them out 48 hours, according to Dadant, and yet they would swarm. Our queens are all clipped; and when the swarm issues, if some one is not there they will unite with another colony instead of coming back to their queen.

LESTER CHILDERS.

Morrow, Kan., Aug. 13.

[Yes, you can do something toward preventing or controlling swarming by running for comb honey; but when bees get excited by the swarming-note, the whole apiary is more or less demoralized. When they are in this condition it is poor policy to return swarms to their old stands. In fact, it is poor policy under *any* circumstances. It is natural for them to swarm, and you must gratify them with a new location and a new hive, or at least a new condition of things. If you do not desire increase, we would recommend Heddon's plan of preventing after-swarms. For a description of his method, see his book, or Mr. Hutchinson's "Advanced Bee Culture." We have sometimes, where we desired to keep down increase, put a swarm in a hive on top of the old one; then after the season is over, put them all into one hive, taking out the surplus combs. Cutting out all cells helps; but it is, as the Dadant say, not reliable.

When several swarms come out together they are very apt to unite, and go with the queen or queens that are in the air. Mrs. Golden's swarm-catcher, illustrated in our last issue, might help very much in a case of this kind, provided you have one on hand and are spry enough to catch them before they all get into the air.]

E. R.

THE MAMMALIAN CATERPILLAR.

I have received from Mr. C. H. Longstreet, Mount Dora, Fla., a most curious caterpillar. It is known in science as *Lagoa opercularis*. It is the larva of a moth, and is peculiar in being clothed with long fur-like hair. As it creeps along one can not but think of some of the weasel family. I showed it to my class as the mammalian caterpillar. The color of the hair is light brown, with some dashes of white. Beneath the hair are stiff bristles, which sting about as does the nettle. It pupates in an oblong cocoon fastened in some forked twig of the tree on which it feeds. The side of the cocoon has a raised spot which resembles marvelously a bud. The moth escapes from the cocoon by a lid much like that seen on a queen-cell after the queen comes forth. I suppose this gave the name, *opercularis*. This insect larva feeds on oak, and occasionally on orange. Mr. L., I think, found this one on the orange—at least, he inclosed an orange leaf in the box which contained the larva. The moth which comes from this larva is pale yellow, lined with gray. It is about the size of the cabbage-butterfly. As this specimen is new to our large collection, I need not say that I received it most gladly.

Agricultural College, Mich. A. J. Cook.

THE IGNOTUM TOMATO, ETC.

Friend Root:—GLEANINGS for Aug. 1 is just received, and its new cover is much admired.

Your talk about crops, and prices you are getting, is very interesting to us down this way, where all vegetables and fruits are raised in such profusion by every family, in town as well as in country, that we might say we have no market, and not miss the truth very far. Extra early vegetables, however, can be sold, and I wish you to know right here how well pleased we all are with the Ignotum tomato seed which I purchased from you last spring. These were sowed under glass, so that the plants were transplanted for outdoor culture by the time other people were sowing their seed; hence I had tomatoes far ahead of my neighbors, and was able to sell large fine Ignotums at the extravagant price of 10 cts. per dozen, or about 2 cts. per pound.

I like it better than the Ruby, Mikado, Trophy, or any other kind I have grown; and it surely comes up to the general-purpose standard you give it. My vines are loaded with large, round, even-running tomatoes of finest quality of size and flavor, and we have been having them a long time.

Melons sell here now at from 5 to 20 cts. A 30-pound melon brings what you get for one pound of cauliflower.

As you say of that potato, and as I wrote you when sending the seed, one season does not always bring out what a vegetable or fruit is. A second year will often change our estimate of a fruit that we have condemned the first. But it is also true, that a valuable fruit in one climate or section proves to be worthless in another; and, quoting you again, it seems as if in horticulture as in other pursuits, to obtain the best results takes constant care, skill, and work. Still, what an incentive there is to have a full variety of all these gifts from the great Giver, around us, and to have each type as near perfection as we can make it.

The honey crop is about gathered here. We now let them fill up with bitterweed for winter. My crop was about 100 lbs. per colony, and netted 7 cts. for extracted and 12½ for section.

I have a novel water-feeder—a plant called water-hyacinth, a succulent plant that will grow in a vessel of water with a little earth, stones, etc., on the bottom. It shoots up many joints with bulblike stems and leaves, which fill a large pan or earthen receptacle very soon, covering the water except in small spaces. The bees find it just the thing, and abandon the well and every thing else for this natural drinking-font. But it is a thirsty plant, requiring plenty of water.

C. P. COFFIN.

Pontotoc, Miss., Aug. 6.

BEEs NECESSARY FOR FERTILIZING PLANTS.

In GLEANINGS you say something about not succeeding with cucumbers. If you should ever come west of Chicago it would pay you to come to Minneapolis, just to see a greenhouse belonging to a German gardener. I do not know the exact size, but I think it covers nearly two acres, besides acres of hotbeds. He devotes the fall and early winter to lettuce, and then fills them up with cucumbers, and they are still selling from them, although outdoor cucumbers are now in the market. His sales from cucumbers alone would amount to several thousand dollars. During the winter and spring he is obliged to keep a hive of bees in each house to fertilize the blossoms, or else very little fruit sets. Last April his bees all swarmed out, and he lost all the queens, but one, and a few weeks after he came to me for more bees. He told me in that time he had lost more for not having them than the amount he paid me—\$27.00. His cucumbers in the greenhouses do not run on the ground, but on trellises of cord and wire slanting up about the angle of the roof of the house. Any one, by stooping a little, can see the whole length of the greenhouse under the vines, and see cucumbers hanging down all around. I have a small farm, and, in addition to my bees, I keep eight or ten cows, and raise some small fruit, chiefly currants and raspberries. The honey crop last year was nearly a failure, and this year does not promise more than half a crop. I hope when you come west again you will come this way, and I will meet you and take you around.

E. R. POND.

Bloomington, Minn., Aug. 6.

HOW TO MAKE EIGHT-FRAME HIVES OUT OF TEN-FRAME SIMPLICITIES.

Will you please tell me what is the best plan to reduce my 120 Simplicities to eight-frame hives? A ten-frame hive is too large. The season is so short that the bees can not fill and seal them.

JNO. H. MULLIN & SON.

Oakland, Tex., Aug. 8.

[If the Simplicities were nailed together with one board lapping on to the other it would be an easy matter; but, unfortunately for your purpose, they are not. The only practical way is to put in dummies in the extra space. Dr. Miller had originally ten-frame Langstroth hives. These he made into eight-frame by sawing through the ends at the right point. He then removed the short pieces hanging to the sides now loose, and then nailed the side back again. The old ten-frame Langstroth caps he discarded, and made new eight-frame flat covers.]

DEVELOPING A RED-CLOVER STRAIN OF BEES.

I want to let you know how I managed to get my bees to work on red clover. For three or four years I have believed they could be graded up to work on red clover. I had the large

brown and Italian, and they are all of that strain now. I commenced watching them, as they worked some on the red; and by their mark, and watching them at the hives, I soon found where the most of them belonged; and I could see a difference in the honey. Then I became satisfied that I could raise a strain of bees that could gather honey from red clover; and this spring they are just booming on it, and I commenced taking off honey the first of July, and many have filled 56 boxes, and are on the second set. The honey is not quite so white, but of a better flavor and twice as much of it. I hope others will try it. Do not get discouraged, for you will succeed, and not be sorry when you can lug in the big loads as I am doing now.

JACOB CHILDS.

Amherst, Wis., July 21.

[I suppose you mean, friend C., that you have been for some time rearing queens from colonies that stored most honey during red-clover bloom. If this is so, it will be nothing strange if you get a strain of bees as large as you describe.]

SUCCESS WITH THE DOOLITTLE CELL-CUPS; BEES FOR BUSINESS INSTEAD OF BEAUTY.

I have ten colonies building cells according to Doolittle, and what a lot of fine cells I am harvesting! I am starting a lot of them every day (except Sunday), and some days two lots. His method is far ahead of any other I have ever tried; and the beautiful part of it is, that the cells slip right into the cell-protectors, without any trimming at all, except when the bees are getting honey pretty fast, when they will sometimes build bits of new comb to the cells. I found one colony this week storing honey so fast from red clover that they were building bits of snowy-white comb to the cells. Who will say that I shall not rear queens from such a queen as this, even if her bees do show but three yellow bands. Your advice, to breed for energetic workers, is to the point. If it were not for my bees' ability to work on red clover, I could hardly carry on queen-rearing now, as the white clover is dried up, and there is nothing for them to work on (to amount to any thing), except red clover. It is wonderful to see how they root down to get to the honey. I have not had to use the bee-tent yet this season, for which I am truly thankful.

My sales during June amounted to \$135.50. GLEANINGS is a good advertising medium.

Morgan, Ky., July 14.

J. P. MOORE.

THE HOFFMAN FRAME.

I should like to tell you of the Hoffman frames I got of you last spring. I have used several kinds of frames; but after a thorough test alongside the "thick top," I find the Hoffman far superior to any other. They are the frame, and will be for years to come. I find them easier to handle, save time and patience, and, so far as manipulation is concerned, free from burr and brace combs. The brood-combs are smoother and nicer. They are not difficult to get apart, as was supposed, on account of propolis.

E. E. EDWARDS.

Alexandria, Ind., Aug., 1891.

[You have come to the same conclusion we have, and I feel sure other unprejudiced persons must come to a similar conclusion.] E. R.

THE SELF-HIVER; HOW IT DID AND DIDN'T WORK.

In an issue of GLEANINGS some time ago you called for reports of the self-hiver, so I will give you my experience with it. I placed a hiver at the entrance of a hive June 25, and on

the 26th a swarm issued, but it didn't work, and I had considerable trouble in getting the queen into the new hive. I then modified the hiver thus: I tore the perforated zinc from the box B, and put in its stead the zinc from box C, and then tore the wire cloth from the second division of box B and beveled the lower edge a little. I place the new hive close to the old one, and raise it a couple of inches above it on four half-bricks; then put the "hiver" in place, not using box C at all, and 99 out of 100 swarms will hive themselves without any care except placing hivers and hives in place. At least, such is my experience.

E. A. BOAL.

Hinchman, Mich., Aug. 10.

A SWARM THAT KEEPS SWARMING, AND WON'T STAY HIVED; WHAT TO DO.

Could you tell me what is the matter with a swarm of bees when they keep swarming out every day or two? I put them into a hive and they will come out and go back to the same hive again. I have two colonies that have done this five or six times this month, and the last week in June.

F. E. HESS.

Whittemore, Mich., July 11.

[Giving a frame of unsealed larvæ sometimes makes such restless swarms contented. If this fails, give them the larvæ, and, in addition, take the queen away from them. Where bees swarm out one or two times after being put back it is better to put them into an entirely different hive in an entirely different location. Sometimes bees take a notion they just *won't* stay in a certain hive. It is best to give up to them, and put them somewhere else.]

SHIPPING DRONES EARLY IN THE SEASON, AGAIN.

In regard to shipping drones, as mentioned on page 557, please refer to page 356, 1889. Since that was written we have had two shipments made from the South in April, with entire success. To get them in the best possible shape, order ahead; and by the time they are wanted your drone brood is nearly ready for hatching when received. Of course, some are hatched. These will do all right by making the nucleus queenless.

J. NEBEL & SON.

High Hill, Mo., July 14.

[It seems, friends, from the above, that, instead of shipping drones, you are shipping drone brood. This can be done, I am well aware, and I think it quite likely that quite a number of young drones could be sent quite safely in a good-sized nucleus.]

BEE-PARALYSIS (BACILLUS DEPILIS) EARLY IN THE SEASON.

Some one says that the nameless bee-disease (or "bee-paralysis") comes from the brood being overheated in combs that have a large amount of bee-bread in them, and that bees do not have it early in the season, before hot weather. Last spring, and this, some of my bees had it as soon as they began to fly. One of the worse cases I have had was the bees from a queen from Florida. If you will set the tin bars in wired frames with the edge against the foundation, instead of the flat side, they will cover but one row of cells, and the bees will cover them entirely with comb.

New Hampton, June 8.

E. D. HOWELL.

[Friend H., I am sure this disease does not originate in the way you suggest. The fact that it is usually found in the progeny of certain queens as long as the queen lives, points pretty clearly to the fact that it is an inherited disease.]

A GOOD REPORT FOR THE PUNIC BEES.

I observe you think the statement of the superiority of the Punic bees is colored. I have not seen that statement, but I assure you that, if they are all as good as some I have had for two years, it will not be easy to exaggerate their good qualities. With me they are the best of all imported varieties of bees.

I also observe that some speak of extra colored Ligurian (Italian) bees. Similar beauties I had were neither more nor less than Ligurians crossed with Syrians, Cyprians, or Holy-Land bees.

WM. THOMSON.

Auchinraith, High Blantyre, Scotland.

HONEY FROM SWEET CLOVER—WILL IT DO TO WINTER ON?

For weeks bees have worked but little except on sweet clover and spider-plant. Can you solve the mystery? Is there any remedy, and will not this dark honey kill our bees next winter?

J. G. WHITE.

Stanford, Ill., Aug. 14.

[Honey from sweet clover and spider-plant, what little there would be of it, would be perfectly wholesome; but sweet-clover honey is not counted dark. Is it not possible that your bees have gathered honey-dew? This would be dark, or darker than any other with which it is mixed.]

WHY BEES HANG OUT.

I want to know why the bees hang out in front of the hive night and day, and do not work. They have been that way for the last four weeks with me.

FRANK JACOBS.

Peshtigo, Wis., Aug. 17, 1891.

[The reason your bees hang out now is because it is warm, and there is probably nothing for them to do. Give, if possible, a wider entrance. If this is not practicable, tilt the cover up at one end. If they are not already in the shade, this may explain why they hang out. In this event, put on a shade-board made of thin lumber, and large enough to project four or five inches on all sides of the hive.]

TO CLEAN BEESWAX FROM PANS AND KETTLES.

Pour into your pan or kettle a small quantity of water, say half a teacupful, then add half as much kerosene; warm over the fire until quite hot; then with an old rag rub all parts of your dish. You will find this removes every particle of wax as easily as you could remove any other substance from the dish. Any kind of grease will answer, but kerosene is best.

MRS. MATTIE A. BONFOEY.

South Riverside, Cal., June 2.

[My good friend, I should be a little careful about advising kerosene in the way you do, especially where you use the utensil over the fire. Remember the many accidents, and lives lost, by the use of kerosene in this way.]

A STUBBORN CASE OF BEE-PARALYSIS.

I can't stop the nameless disease by changing queens. I will kill my bees and commence with new ones. Could I use the old hives and combs again without disinfection? If not, what shall I do?

FRED A. HUND.

Casco, Mich., June 10.

[Friend H., it is possible that infection can hang about the hives. But nobody can settle it without making a test. Take a hive where they have had it the worst, put in a new swarm, and see whether you find more of it. See Doolittle's article elsewhere.]

TARRED PAPER FLAVORING HONEY IN THE HIVE.

I have lost about 700 or 800 lbs. of comb honey from using tarred paper in the bottom of those one-story chaff hives. It gives the honey a terrible flavor.

M. W. BREECE.

Delaware, O., July 13.

[Friend B., I am sure that the tarred paper has nothing to do with the flavor of the honey; that is, the terrible flavor came from something else. We have used tarred paper on the bottoms of chaff hives for toward twenty years, and never heard of such a thing before.]

WHAT SHALL WE DO WITH HONEY DAMAGED BY HONEY-DEW?

My crop is ruined for sale with honey-dew. I have nearly two tons of this stuff. What can I do with it? My hives are all full from top to bottom with the disagreeable stuff.

Marissa, Ill., July 15.

WM. LITTLE.

[I do not know what you can do with your honey unless you sell it to confectioners, vinegar-makers, manufacturers of printers' rollers, or for some other manufacturing purpose.]

AN AVERAGE OF 2500 LBS. OF HONEY A WEEK.

The bees are doing well. They are making an average of 2500 lbs. a week at present. I have 150 capped hives, and 50 weak one-story hives and nuclei. Our best honey-flow comes next month; then I expect two tons each week, and perhaps more. I have about 30 of my best hives making comb honey. The rest are working for the extractor. I sold yesterday 5000 lbs. extracted, at 5 cts.

G. W. CAMP.

Armona, Cal., July 21.

GLEANINGS AND ITS CONTENTS.

I think the man who complains about the index in GLEANINGS is not as interested in it as I am. I always commence in front of the paper, and read it through, and then the index will do me no good. There is nothing in it that I do not like. I only wish there were more of it. Is Bro. Manum alive yet?

J. P. MEYERS.

Fort Dodge, Iowa, July 21.

[We will let Bro. Manum speak for himself. We think he is alive yet; but he is probably pretty busy.]

SUCCESSFUL MOVING, AND BEES BOOMING ON ALFALFA.

I moved my bees, 150 colonies, from Newark, Ark., the last of May, without the loss of a single colony—pretty good success, I think. Alfalfa is just now in full bloom, and you ought to see the bees work on it. They are just booming, but they will have to boom all summer to pay back the money I have spent in bringing them out here.

ALBERT ARNOLD.

Duff, Col., June 23.

WHITE CLOVER NEARLY A FAILURE: BUT PLENTY OF DARK HONEY-DEW.

White clover yielded no honey until about July 15. Until the present, all the honey we have taken is honey-dew, and extremely dark. The season has been extremely wet, and the prospect for a fall flow is very encouraging, as there is a rank growth of vegetation everywhere.

A. A. WEAVER.

Warrensburg, Mo., July 30.

The basswood bloom was the least here for ten years.

C. J. BARBER.

Rodney, Iowa, July 20.

MYSELF AND MY NEIGHBORS.

I in them, and thou in me, that they may be perfect in one.—JOHN 17:23.

Dear friends, I am speaking to you on a sick-bed. I have been here for something over a week. The doctor calls it nervous malarial fever. As he insists that what I dictate shall be brief, you will excuse me if I come directly to the point I wish to make to you just now. There have been many improvements in medicine since I was under the doctor's care toward forty years ago; and one of these is a beautiful little instrument called a *fever thermometer*. It is placed underneath the tongue, and tells whether the patient's temperature be normal. The doctor and I call it the "orthodox temperature," just for the sake of variety. Well, now, I had forgotten (or had never known) the astounding fact, that there is one fixed, *exact* temperature for the blood, not only in human beings, but in animals as well. When you stand beside your horse and pat him on the neck, you can feel that you two are brothers in at least this: That the temperature of the blood in *his* veins is the same as that in *your own*, even to the *fraction of a degree*. It seems that the Almighty, in his infinite wisdom, decided in the beginning that the best temperature for the growth and well-being of the human organism is just that point— $98\frac{2}{3}$ —no *more* and no *less*. The instrument is made with only a narrow range, so that the degrees are usually divided into fifths; and with this beautiful little instrument, even a child could read the fifth of a degree, without trouble. Of course, the thermometer is self-registering; that is, the mercury, when it is pushed up the tube, stays there until the nurse can read it at his leisure. After that, he shakes it down. I questioned the doctor long and closely about this; and he said the blood remains at this exact point almost until death comes; that neither summer's heat nor winter's cold makes a particle of change, so carefully has nature fortified and guarded and prepared these wonderful bodies of ours for emergencies. Finally I burst out: "O doctor! why is it not possible to find some line of *moral* temperature running through all humanity—say among political parties, for instance—some common ground of agreement somewhere—something that can besettle *once* and for *ever*, to remind us that we are brothers—one through God, and through that only Son of whom we are told in our text?"

He drew a long sigh, and smilingly admitted that it *would* be a "big thing" just at the present crisis of affairs. And then I fell to thinking of *religious* denominations—that even *we* are not settled conclusively on *very* many things; and then I thought of one thing of modern date that, after all, seems almost parallel to the fever thermometer. There is an organiza-

tion—I was going to say in *our* land; but, thank God, it really extends throughout a great part of the *whole world*—an organization where all Christians of whatever denomination drop differences of opinion and circumstances of every kind, and meet and *work* together with about as much *singleness of purpose* and *unanimity* as the little instrument tells us of; viz., that the temperature of every man, woman, and child, high or low, rich or poor (in *health*), is absolutely always at one and the same point, even to the fraction of a degree. I will tell you what this society is. I have some very good Christian friends who can not think exactly as I do, and I can not think exactly as *they* do, and no amount of *talking* will help the matter. Suppose we, for the sake harmony, should say:

"Here, Lord, we bring our differences of opinion, and things we can not agree upon, and lay them at thy feet, leaving thee to do with them as thou seest best. And here before thee we clasp hands in brotherly love—in love to thee, and in love to all the rest of humanity whom we find on the face of the earth."

And this is what this Christian Endeavor society has done. And now my good young friend Mr. Calvert will tell you of the wonderful meeting that has recently been held by this society of Christian Endeavor in Minneapolis—probably the largest assembly of Christian workers the world has ever seen.

REPORT OF THE INTERNATIONAL CHRISTIAN ENDEAVOR CONVENTION, HELD AT MINNEAPOLIS, JULY 9 TO 12, 1891.

The tenth international Christian Endeavor convention has passed into history as the largest and doubtless the most enthusiastic and spiritual gathering ever known in the history of the church. No doubt most of you have read somewhat of this meeting already, as there has scarcely been a paper, religious or secular, in all the country, that has not at least mentioned it, if they did not fully report it.

The Ohio train, with over two hundred delegates, reached Minneapolis just an hour before the opening of the convention; and, not having time to find our lodgings, we marched at once to the exposition building, where the convention was held. We first had to fill out registration blanks, for which we received a program, a leaflet of 24 pages, with selections from the new Christian Endeavor edition of Gospel Hymns No. 6, and a badge, which we must wear to gain entrance to the hall before the hour of opening each session. Entering the hall we found tacked to the posts, in conspicuous places, and in bold letters, the names of each State and province over the section set apart for their delegation. In front of the platform, on the floor, was the place assigned to Illinois: to the right, Ohio; to the left, in the gallery, Indiana, Massachusetts, Michigan, Nebraska, and so on throughout the vast hall; each State was gathered under its own banner with its chosen inscription.

Notwithstanding the immense jam attending registration, the hall was pretty well filled at the hour of opening; and at 4:20, Pres. Clark, or, as he is familiarly called, "Father Endeavor," Clark, said, "Let our first words be the voice of song," and announced Coronation—"All hail the power of Jesus' name!" and, oh that you might

have joined that mighty chorus! It would have thrilled you as you were never thrilled before. One of the most inspiring parts of all the convention was the singing, of which we had much. It was no effort to sing in such a company; indeed, it would have required a greater effort *not* to unite in those grand melodies of praise.

After preliminary business and prayer, the first words of welcome on behalf of the committee of 1891 were spoken by the chairman, T. B. Daniels. He said the people of the twin cities were proud of their factories, lakes, and the Father of Waters; but they were prouder still to open their hospitality to the greatest army ever gathered, not for any selfish end, but for "Christ and the Church." Ours is a crusade that is sure to win. The old Crusaders fought for land; but we fight for souls; they fought with spears and with swords; we fight with a sword too, but it is the sword of the Spirit, the word of God. The eyes of the world, also our Master, are watching us, and we must ever adhere to our motto—"For Christ and the Church."

A. J. French followed on behalf of the pastors of Minneapolis. He counted it a high honor to welcome such an assembly. He told of the strength of the church in their fair city, and what they had done for temperance. They had a church for every 1052 of population—far ahead of any other city of equal or greater size in America. The saloon power entered on a crusade to extend the city patrol limits, and thus extend their influence. The churches came out boldly, opposed to the scheme. The enemy threatened, and was furious. When the election had passed, and the smoke of the battle had cleared away, it was found that the limits were just where they were before. Said he, "Ingersoll says, 'The church must go.' Certainly it must go—go into all the world to preach the gospel to every creature. Christian Endeavor with its youthful vigor and aggressive methods is destined to greatly help to make it go."

Rev. Robt. Christie spoke in behalf of St. Paul pastors, giving a hearty welcome to this new child of the church, the youngest and the best. He commended Christian Endeavor because it promotes interdenominational fellowship; and, let me say, this was the keynote of the whole convention. Nothing is so injurious to the Christian name as denominational jealousies. Such meetings as this clarify the vision. The church shall prosper when loyalty shall be tested, not by subscribing to any particular creed, but by a common loyalty to Christ. Youth has the power to influence youth, when the aged would doubtless fail. In this lies our strength. When Jesus wanted disciples he called the youthful James and John, and left the father, Zebedee. Missions are awakened, not by some learned divine or bishop, but by the youthful Carey. And by other striking examples he proved that youth is the time for Christian service. My brother, my sister, are you giving that service gladly, enthusiastically? If you withhold it you are missing the best things in life.

John H. Elliott, on behalf of the Y. M. C. A., spoke earnest words of welcome, telling of the close relationship between the Y. M. C. A. and the Y. P. S. C. E. He was glad that they both rejoiced in the old gospel, and had no room for the new theology and higher criticism, and other isms of the times. Response was made by Geo. H. Wells, of Montreal; and it was probably the most witty and telling address of the convention. He carried every thing by storm, eliciting applause at almost every sentence. He spoke of the scene of the convention being near the head waters of the streams that

flow to the Arctic seas, the Gulf of Mexico, and the Atlantic; so the streams of blessing would flow from this convention to bless the continent. The Methodists, said he, are fiery; the Baptists like water. When these elements are united they will put each other out. Properly united, they make steam. So in Christian Endeavor. We unite them to make the steam that drives the gospel train to carry the glad tidings to all the world. Christian Endeavor is not denominational; is not undenominational; but it is interdenominational and also international. As we come from different countries, it dispels prejudice.

Around the front of the high platform on which the speakers stood were wreathed the stars and stripes and the Union Jack, united with a wreath of flowers forming the initials C. E. He called attention to the flags, "which," said he, "at first sight look different, but really are much alike. They are composed of the same material and the same colors. We be brethren. Let there be no strife between your fishermen and our fishermen, whether they catch cod or seal."

After adjournment, supper and a song service. The evening session opened with singing "Stand up for Jesus," and repeating in concert the 23d Psalm. After singing "Nearer, My God, to Thee," General Secretary Baer gave his annual report, which was full of statistics, by no means dry and uninteresting. The growth of the movement for the past year has far outstripped all former records.

A year ago at St. Louis there were reported 11,000 societies, with a membership of 660,000. This year there were reported 16,274 societies, with 1,008,980 members, and there have been gathered into the churches from the societies, 82,500 young people in one year; 307 societies are reported outside of America, of which 120 are in England, 82 in Australia; India 30, Turkey 12, China 7. Canada reports societies in every province, and 829 in all. The States having the largest number of societies in their order are as follows: New York, Pennsylvania, Ohio, Illinois, Massachusetts. Oklahoma won the banner for the greatest proportionate gain during the past year, increasing from 1 to 15 societies. Pennsylvania won the banner for the greatest aggregate gain, increasing 645 during the year. The Junior movement is rapidly growing, and 855 societies are reported. In this movement Illinois is the banner State, with 122 societies.

Thirty denominations are represented in this world-wide movement. The Presbyterians take the lead, with 4019 societies; Congregationalists next, with 3545; the Baptists rank third, with 2381; the Methodists rank fourth, with 2068 societies; and if the memorial to the General Assembly prevails, and our Methodist brethren settle the Epworth League question as they have settled it in Canada, by calling their societies Epworth Leagues of Christian Endeavor, then they will take the first rank in numbers, settle a vexed question, and bring glory to the cause of Christ. Christian Disciples rank fifth, with 801 societies. The glory and strength of this movement is, that, while each society is first loyal to Christ and its own church, still it is adapted to the needs of each and every denomination, and all can unite in interdenominational fellowship. This was referred to again and again by representatives of twenty or more denominations on the program.

After a song by Ira D. Sankey, "Throw out the Life-line," and reading of cablegram greetings from Australia, South Africa, and Japan, Father Endeavor Clark arose for his address amid showers of applause and waving handkerchiefs. Father Clark is always unassuming

and modest, giving all the glory for the spread of the Endeavor idea to God, who directed him in its conception. His theme was, "Fidelity and Fellowship."

The two elements most prominent in the Endeavor movement have been fidelity to the local church with which each society is connected, and the broad fellowship represented in this gathering connecting the different divisions of Christ's army by common bonds. Our fidelity would become narrow and bigoted without fellowship, and our fellowship flabby and sentimental, without fidelity unswerving to the Church or God, but with fidelity and fellowship we may win the world to Christ. The watchword of the day is "combination." Rumseller is combining with rumseller; speculator with speculator; libertine with gambler, to resist good laws, to obstruct righteous legislation, and bring about a reign of terror among the hosts of God. Shall we, who represent the coming generation of Christ's warriors, play into the enemy's hands by weakening our ranks and dividing our hosts? "United we stand, divided we fall," is as true of the church to-day as it was ever true of any cause.

Bishop Vincent, who was to preach the convention sermon, was detained in Chicago on his way by an attack of bronchial trouble, from which he has suffered much of late. He told Secretary Baer in the depot that, had he been a Presbyterian or a Congregationalist, he would not have started to come; but being a Methodist, he *must* make the attempt. The vacancy thus made in the program was admirably filled by Rev. O. H. Tiffany, of Minneapolis, who followed up the theme of the president's address in stirring words from John 17:21, "That they may be one, as thou, Father, art in me and I in thee, that they also may be one in us, that the world may believe that thou hast sent me." The world complains of our denominationalism and sectarianism, and can not see the oneness of our Christianity. Christian Endeavor is helping more than any thing else to dispel this delusion. We may differ in our creeds, but we are one in Christ; and the days of church strife are largely past. He hoped to live to see the lion and the lamb lie down together, the Arminian and Calvinist walking arm in arm. Mr. Sankey related the origin of the familiar hymn, "Ninety and Nine," and then sang it as he did the first time in Glasgow, some twenty-five years ago.

Every thing was applauded as only young America in the joyous mood of Christian Endeavor knows how; but Mr. Sankey made a special request that applause be omitted after his songs; "for," said he, "who can tell but that some wanderer may be led to thoughts of seriousness that would be dispelled by such demonstrations over songs so sacred?" Endeavorers, ever loyal and obedient, were glad to obey this wish of the great singer.

Friday morning, at the 6:30 prayer-meeting, found several thousand in attendance; yet the company, compared with that vast hall, resembled a prayer-meeting in the auditorium of our churches. The second morning there were nearly double the number. If the delegates could have located nearer the building, no doubt many more would have come. The response was ready, and those who attended were uplifted and strengthened.

One of the best sessions of that best convention, and it was hard to tell what is best, it was all so good, was the free parliament Friday forenoon, conducted by Rev. J. A. Rondthaler, the "Indiana Cyclone," from Indianapolis. Topic, "What the Society has Done." In exhorting them to be brief and to the point, he says, "Leave off the introduction, cut off the

closing, pull out the middle, disintegrate the remainder, and give us what you have left."

As a result we had 67 testimonies in 63 minute, and each one repeated in the main by the leader so that all could hear.

A number of societies reported that they had sustained services in pastorless churches for periods of 6, 9, and 12 months. Nebraska reported a society in every town, city, and village in the State. Societies of Painesville, Ohio, had closed all the saloons. Societies in Cleveland had closed the Sunday theaters. Society in Peoples Church of Boston have got hold of a lot of Chinamen and brought them into the Sunday-school as permanent members. Another sends their members in squads to conduct services in mission Sunday-schools in surrounding territory. A society in St. Louis wholly supports and mans with teachers a mission Sunday-school of a thousand children. Another society appoints a number of its members each week to take part in the regular church prayer-meeting. C. E. Union of Syracuse, N. Y., have closed the Sunday saloons and stopped Sunday ball-playing.

Another society carried on the work of the church during the prolonged sickness of their pastor so well that, on the first Sunday in which he took charge, after his recovery, 106 persons were received into the church. The Christian Endeavor Society trains teachers for the Sunday-school. In one State 162 societies have brought 1026 into the church, over 100 of these from one society. Another society has a vestibule committee to welcome strangers at the church-door, and introduce them to the members after the service, making them feel at home. And no one who has not gone as a stranger to another church knows how to appreciate these words of welcome. Systematic *benevolence*, which means *well-wishing*, has been changed to systematic *beneficence*, which is *well-doing* by another society, and so the testimony rolls on.

What the society may do was clearly defined in three addresses which followed in the morning session: The Society and the Pastor, by F. O. Holman, of St. Paul. The relation of the pastor to the Christian Endeavor society is the same as to other organizations of the church. If such a thing should happen as a disagreement between pastor and society, the ultimate appeal is not to the United Society, not to F. E. Clark, not to Sec. Baer, but to the governing board of the local church, and nowhere else. The relation of pastor to society is expressed in the one word "*loyalty*." Brag of your pastor, and attend all the church services. If a noted speaker comes to town and speaks in another church, and there are services in your church, be loyal and attend your own church, and thus inspire your pastor.

"The Society and Sunday-school" was presented by the great Sunday-school man, Jas. A. Worden, of Philadelphia. Though a great Sunday-school worker he was also greatly in love with the Christian Endeavor society. He said that every member of the Sunday-school, from the primary department up, should be, heart and soul, members of the Christian Endeavor society; that 75,000 Sunday-schools of the United States and Canada are afflicted with antediluvian mossbackism, too conservative to welcome an efficient ally in their work of winning souls. He made much of the fact of our remaining young regardless of the number of years we had lived. What have we to do but grow young? "Except ye be converted, and become as little children, ye shall in no wise enter the kingdom of heaven." When we have all eternity to grow in, what business have we growing old? To keep young in spirit, we

must keep in touch with the young people. If we want a sure recipe for growing old, it is, to criticise the young; look with suspicion on their efforts and find fault. He rejoiced in the Christian Endeavor movement because it is training an army for battle with anarchism and nihilism on the one hand, and Romanism on the other. He was glad because the women are included in it, because they are our most efficient workers. He said the Sunday-school was not what it seemed to be in too many of the schools, simply to grind out 52 responsive exercises and lessons during the year, but to win souls to Christ; and where will you put your young converts from the Sunday-school but in the Christian Endeavor society, to be trained in Christian service? and the school should send them into the society, surcharged with the sincere milk of the word. There are three things the Sunday-school officers are going to set out to do the coming fall, in which he asked our help:

1. Gather all the church into the Sunday-school.

2. Gather in all those who have drifted away from the Sunday-school.

3. Gather in those outside who do not now attend.

The society as a soul-winner was the general thought of the afternoon session. There were four open conferences, similar to that in the morning. "Souls won through the committees" was lead by F. J. Harwood, of Wisconsin. The Lookout Committee was called the eye; the Prayer-meeting Committee the heart, and the Social Committee the hand of the society. Make strangers so welcome that they will come again. "Souls won through the prayer and consecration meetings." The prayer must be from the heart, and the consecration real. Know the sinner, and know the way of life personally, if you would win souls. Look after the bashful and awkward boys; no hearts so susceptible to good or evil influences. In one society, consisting of one-third of Associate members, these were divided among the Active members, and personally invited to give themselves to Christ, and in less than two months there was only one Associate member left.

"Souls won through the Junior societies," led by W. W. Sleeper, Stoneham, Mass., was full of inspiration. The children's crusade in the Christian Endeavor was born for victory. The children have been too much crowded out and ignored. They eat the same food for their bodies as their elders, and can enjoy much of the same spiritual food. The Junior Societies have proved to be soul-winners. Numerous instances were given where the children were brought into the church through the Junior society. In the Junior society organized seven years ago, in Phillips Church, Boston, every one of the fifty original members has united with the church. In a society of 40 in Philadelphia, six of the parents were brought into the church; 35 additions to the church from the Junior branch of a Toronto church, and many like wonderful testimonies to the value of work among the juniors.

Passing the Local Union Conference, which was full of inspiration and suggestions, Rev. C. A. Dickenson told us of the recent campaign in England, where the Christian Endeavor cause is full of promise. Then followed a most stirring address by the evangelist, L. W. Munnhall, on "The Society as a Missionary and Evangelistic Force." Would that I might bring you a coal from that fiery appeal! The necessary things are, first, consecration, not to the Y. P. S. C. E., not to the church, but to Jesus Christ. No matter if the work succeeds or fails, your business is to be consecrated to him. Next,

systematic Bible study. "Study to show thyself approved unto God, a workman that needeth not to be ashamed, rightly dividing the word of truth." Third, personal work, using the Bible which you have rightly divided. "And remember," said he, "you will never have any influence in winning souls to Christ if you go to the prayer-meeting one night and to the theater or card-party or dance the next night. I have, in the meetings in which I have labored, seen 100,000 avow themselves Christians, and I never knew a young person who indulged in these things to be inquired of by their companions in the way of life." My Christian brother and sister, you who have named his name, and still indulge in these amusements, can you stand in the last day acquitted before God, with your comrades gone to perdition because of your careless example? Oh for consistent, consecrated lives, lived in the likeness of Christ our perfect example!

I must pass rapidly on to the close of the evening session, when Dr. Barrows, of Chicago, announced the decision of the trustees to hold the next convention in New York. This was greeted with loud applause by the delegates from the Empire State. But above the applause was heard the noise and crash of a thunder storm. Soon the electric lights flickered, and went out entirely, and there we were, 12,000 in the midst of that great building, nearly 10 o'clock, in total darkness. All is silence. Presently a voice starts in the melody.

Blest be the tie that binds
Our hearts in Christian love.

What matter if the tempest raged, and for aught we could tell, our last hour had come? A loving Father was watching over his own, who rejoiced in his love. How our hearts were knit together, as our voices swelled in that glorious melody! Presently, after a darkness of several minutes, as it seemed, the light returned, and the exercises were resumed. I would not have missed that experience for a great deal, and I could not help thinking that, if the company were of worldly people attending a theater or a circus, or something of that sort, there might have been a panic and stampede in which many would have lost their lives.

The address Friday night on "The Revival of Generosity" was too good to pass by unnoticed. The speaker mentioned the urgent calls for men and money for the Lord's work from all parts of the world. No investment that we can make is so sure of results, so sure of an income, as investment in the gospel, not only from a spiritual standpoint, but from a business view. If we should send \$5,000,000 to educate and Christianize the negroes and poor mountain whites it would, within a few years, be returned to us fivefold for wares to supply the new needs created by elevated tastes. He believed that the day is coming when shrewd business men would recognize this, and, instead of investing their money in bonds and real estate, would invest it in the gospel. There is need of such an awakening. Twelve thousand millions of this country's wealth is controlled by Christians. Of this, three cents out of every \$100 is given for the support of the gospel. The Christians of U. S. give an average of 25 cents a member for the support of the gospel. The poor Chinese Christians give \$1.00 per member, and the Moravians \$12.00 per member. Our civil government has a claim upon us which it uses in demanding taxes for its support. So God's government has higher claims upon us which we are just as much bound to respect. If we are liberal in giving of our means for the support of his government, he will prosper us abundantly.

I must leave unsaid many of the best things.

When the delegates passed out of the hall, and when they came in, they were singing. On the crowded electric cars and on the crowded streets they sang—singing everywhere.

This is my story, this is my song,
Praising my Savior all the day long.

The climax was reached in the closing consecration meeting, in which fully 10,000 took part. Whole State delegations rose in a body, offering their consecration in a word or song, in concert. Almost every one at the meeting pledged himself to try, during the coming year, to lead one soul to Christ. How many of you, my readers, will join in the pledge?



They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run and not be weary; and they shall walk, and not faint.—Isa. 40:31.

We should be glad to furnish sample copies of GLEANINGS for distribution at fairs. Remember, we allow you 25 per cent commission on all subscriptions you take personally.

AMONG the new bee-journals for 1891, the *Missouri Bee-keeper* promises to stay. It is well printed, and the editorials snap with experience and good humor. Success to you, Bro. Quigley.

THE *Missouri Bee-keeper* says that thick top-bars are a great improvement; and although there were a few brace-combs—or, as we now distinguish them, burr-combs—there were not enough to justify the use of a honey-board.

SOME of our agricultural exchanges, in their bee departments, are calling extracted honey "strained honey." The fact is, there is little or no strained honey on the market—at least, in any quantity. Strained honey is a very poor article in comparison with that taken by the extractor; and we hope the apian editors of our agricultural exchanges will see that the right word is used.

A CORRESPONDENT writes: "Only a small portion of the California bee-keepers are happy this year, as the honey crop is almost an entire failure. San Diego Co.," he adds, "sends in the best report; but there is only one-fourth of a crop for other sections." While this is discouraging for California bee-keepers, it means a stiffening of prices on eastern honey—a fact that our producers should bear in mind as well as commission merchants.

WE learn from our Spanish bee-journal, *Revista Apicola*, that Prof. Heer, of Zurich, has discovered 844 species of fossil insects which date back to the tertiary period. Among these is found a bee, well preserved, which has been added to that museum. Its size is half that of the present bee. Its tongue, wings, and abdomen are well defined, and also its composite eyes and two simple ones. Prof. Herr has named it *Apis Adamitica* (bee of Adam) and he considers it the progenitor of the present bees.

WILLIAM LITTLE, of Marissa, Ill., says that, while some 40 colonies gathered very dark and unpalatable honey-dew, he had some ten others

that gathered only white honey, leaving the "nasty stuff" entirely alone. We hope our friend will tell us more about those ten colonies. Were the 40 hybrids and blacks, and the 10 pure Italians? It is a fact often observed, that Italians will gather white honey while the blacks and hybrids are busy at work on buckwheat and darker grades of honey. If we are going to be bothered with honey-dew from year to year, it might be well to single out those races that leave the "nasty stuff" alone.

It has sometimes been questioned whether there is any use of importing queens from Italy—at least for some time to come—the argument being that home-bred American Italians are just as good or even better. In our Shane yard there has been for several years nothing but the latter kind of bees. The most of them were nicely marked, and were good honey-gatherers; but, oh my! they are cross. In remarkable contrast to these are the bees from imported queens that were introduced a couple of months ago. While they are just as good and in many cases better honey-gatherers, they are very quiet. The gentlest bees we ever had were from imported stock.

SINCE we have begun to paraffine the candy-holes of the Benton cages, of the hundreds of queens we are sending out, the number to be replaced amounts to *practically* none. As these results began to be noticeable *immediately* after paraffining the candy-holes, it is something significant. By the way, S. W. Morrison, formerly of Oxford, Pa., now of Colorado Springs, Col., writes that he has used for many years, paraffine in the candy-holes of his cages, and that it worked well with him. As we stated editorially when we first announced the matter of paraffine for cages, the idea is old; but it is one of the *old* things that is worth reviving.

MR. ANDREU, editor of the *Revista Apicola*, a Spanish bee-journal published at Port Mahon, island of Minorca, near Spain, is anxious to know about that Minorcan queen he sent us in 1888: and he asks us, by printing in his journal, in the English language, in big plain letters, what we thought of them. Our last report in reference to them was given on page 755, 1889. Since then, the bees proved to be rather vindictive; and although they differed a good deal from the common blacks of this country, they were somewhat nervous, and unpleasant to handle. The queen was enormously prolific; but somehow this spring she turned up missing, and we have had none since. By the way, Minorcans look a great deal like the samples of Punic bees we have seen.

SWEET clover seems to be growing very profusely along the roadsides in the vicinity of Medina. We do not discover it anywhere else. It is doubtless scattered during the muddy season by the seed clinging to the wheels of wagons. By the way, some one was ungenerous enough to report that A. I. Root had been sowing the plant all over Medina. Nothing could be further from the truth. We had a little patch of it on our honey-farm years ago, but we could hardly hire it to grow. But along the roadsides, on the hardest kind of soil, where nothing else will take root, it will start spontaneously and thrive wonderfully. It can not very well be a pest to farmers, at least in this vicinity. While it looks unsightly to the average person along the roadsides, to the *bee-keeper* it looks very pretty when it is dotted with the little toilers as it usually is during the day when they can fly.

PRUNING OFF THE CORN-TASSELS FROM EVERY OTHER ROW.

We have been practicing this until we are satisfied there is no question but that it really will do all the experiment stations claim. Two small boys go out nearly every day in our field of Shoopcorn, right opposite the factory, with a wheelbarrow, some half-bushel market-baskets, and a couple of ten-cent pocket-knives. They cut every tassel out as soon as it makes its appearance. As the boys are small, they do not work many hours a day, and the tassels cut out are worth nearly if not quite what we pay the boys for doing it. I suspect the tassels are worth a little more for horses and cattle than the other part of the corn-fodder. Now for the result: The pruned hills have developed great stocky plants, with ears that stand out, both in silk and size, in a marked degree in contrast with those in the other rows that are suffered to mature the tassels.

HOUSE-APIARIES; HOW TO MAKE THEM A SUCCESS.

THE last *Bee-keepers' Review* is an excellent number. It discusses the subject of house-aparies. In our judgment, the best article on the subject is from the pen of James Heddon, and it covers every point. Among other good things, he says, "Never let any one advocate the use of any hives, frames, cases, or brood-chambers that are fixed within the building." You are quite correct, Mr. Heddon; and you might have added, that they prevent the bees from escaping into the room, for all outside hives are supposed to be bee-tight. One great reason why the house-apary was abandoned was because the hives or compartments for holding the frames are fixed to the sides of the building, and it is not easy to make these so they are bee-tight. Again he adds: "The annoyance from robbers is the one great cause of irritability among the bees of an apary; and I want to tell you that, if you have a colony that is so confounded mean that you expect to be stung even when using the smoker, put them into the house-apary and the bees will behave perfectly." I have noticed this very thing myself; and, in fact, it is a very rare thing indeed for bees to sting inside of a building. To suddenly find themselves indoors takes all the fight out of them. In winding up, Mr. Heddon concludes: "On the whole, I think the house-apary, when rightly made and managed, is, in many localities, a thing of comfort and profit. It is an easy thing to pack colonies in for winter; and after being packed, I can see what splendid advantages can be gained from stove heat during extremely cold weather."

WHAT KIND OF PACKAGES SHALL WE PUT EXTRACTED HONEY IN TO SHIP?

From our experience, we say emphatically, 60-lb. square cans, not kegs or barrels. Several years ago, when the square cans were first brought prominently before bee-keepers as a convenient package in which to ship extracted honey, we were continually having trouble by the barrels and kegs springing a leak; and before we knew it the bees would find it out and be set to robbing. We had so much of this that we well nigh made up our minds that we would not buy honey in kegs or barrels at all, or, if we did, we would transfer it into cans as soon as it arrived. About a year ago, inquiries were sent to the commission men to find out what kind of packages they preferred for honey, both comb and extracted. Some few favored the cans; but the majority said that, while they preferred cans for California honey (because they could not get it in any other way) they would rather

have extracted honey, so far as possible, in kegs and barrels. From these reports we concluded that, may be, we were prejudiced, and have gone so far as to offer honey-kegs for sale. This year we have received five or six lots of honey in kegs and barrels, and in every instance they were leaking on arrival, while we very seldom have a case of leaking with the cans. Is this merely accidental, or are the cans really better? We certainly have good grounds for thinking so. And if we put aside this matter of leakage, are not the cans a much more convenient package for the retailer to draw from than a keg or barrel, especially if he uses the screw-top honey-gate? For storage the cans take less room; and though they can not be rolled around like kegs or barrels, yet on the whole they are convenient to handle. We are much inclined to think that the commission men or their customers prefer the barrels, for the same reason that some of us stick to old things and notions that we are used to, simply because we are used to them and dislike to try new things; and yet if they have had the same experience we have with leakage, it would seem as if they would welcome something better. Leaky kegs and barrels can usually be remedied for the time being by driving on the hoops; while if a can springs a leak a tinman has to be called in, or the can emptied to stop the leak. May be this is the explanation of it. We greatly prefer to contend with an occasional leaking can than to be continually tinkering with leaky barrels and kegs.

HANDLING HIVES INSTEAD OF FRAMES—WHO WAS THE PIONEER?

MR. HUTCHINSON copies the article from Mr. Gravenhorst, which appeared in *GLEANINGS* for July 15. In a footnote he is glad that the editors of *GLEANINGS* accord to Mr. Heddon the credit for *agitating* the question of handling hives instead of frames; but he thinks we do not give him *sufficient* credit. All right; we shall be glad to give him more if we can. Our Dowagiac friend has certainly done much toward making the idea popular; but it has been mostly in connection with his new patented hive. He has said very little in regard to handling hives instead of frames when applied to hives of other construction. Mr. Hutchinson asks, "If Mr. Heddon is not the pioneer (in the matter) who is?" We still think Mr. Heddon is not the pioneer in its advocacy or its use, and we will mention a few whom we think precede him. For instance, we will here mention our much-lamented friend M. Quinby; then following soon after, L. C. Root, Capt. J. E. Hetherington, and P. H. Elwood; Julius Hoffman, too, has long carried into practical application the scheme. Their system of manipulation enables them to perform many of the operations by handling hives in halves—in other words, splitting their hives *perpendicularly* instead of *horizontally*, *a la* Heddon. So far as the *main principle* is concerned, it is just the same whether we handle the hives in *perpendicular* or *horizontal* halves. Then, again, in early times there was Barnett Taylor, of Forestville, Minn., who says he has long practiced the plan; and then we must not forget our much-respected friend C. J. H. Gravenhorst, editor of the *Bienenzeitung*. Mr. G. has been advocating this ever since he has been a bee-editor, and how much longer we do not know. Now, even if Mr. Heddon *did* advocate the handling of hives instead of frames in early times, the references to that idea are very obscure; and we are inclined to the opinion that Mr. Hutchinson, catching on to its possibilities in later years, gave it more prominence than Mr. Heddon himself. But suppose that these men did

not publish the plan, as some of them did not. Would it be right for some one else, who, *later*, conceived the idea and published it, to have the honor, and control of its use?

We can not agree with the statement, that the one who first publishes a discovery is the one who should have the honor of an invention. It belongs to the one who can prove the *first use*. That may be by printed proof, or by reliable witnesses who are still living, either one of which is recognized in the courts of law in deciding these difficult cases between inventors. Mr. Heddon may have been the first one to use the terms "handling hives instead of frames."

Now, please understand, Bro. H., that we are not trying to detract from Mr. Heddon's rightful glory or credit as an inventor. We recognize the fact plainly that he is a practical bee-keeper, and one of the few who are able to discriminate between the useful and the useless. He has contributed, by his practical articles, many a useful idea, many of them entirely original with himself; but just how many it would be impossible for any one to say. Remember, this world is full of ideas and inventions; and the man who can locate accurately and unerringly to whom priority belongs, would be an anomaly indeed; and therefore our position may be wrong and yours right. In these days, when so many minds are at work upon the same problems, new ideas and new inventions are necessarily born simultaneously, or so near it that no court of equity nor any editor of a bee-journal, if it be in his sphere of work, can decide to whom the credit belongs. Now, let us simmer this discussion down into this illustration: Mr. A, a quiet sort of man, has been using a bee-escape, say ten years. Mr. B, quite independently, a prominent bee-keeper, some ten years later, invents the same thing, patents it, and publishes it to the world. Is it fair or just that Mr. B should go to Mr. A and say, "Here, you have got to stop using that. I was the first one to publish that bee-escape. To me belongs the credit and royalty"? That is the way we look at this "first publishing" matter.

Blest, too, is he who can divine
Where real right doth lie,
And dares to take the side that seems
Wrong to man's blindfold eye.

THE 52D THOUSAND OF THE A B C OF BEE CULTURE.

WHEN we finished the 42d thousand, about a year ago, we thought we had so revised it that next time we could put it in the press with but few changes; but our industry has made such progress during the last year, that, in order to bring the work clear up to 1891—in fact, almost 1892—we found we were obliged to re-write much of it, besides adding some entirely new subjects not before incorporated. Among the latter are Fixed Frames; Frames, How to Manipulate; Record-keeping of Hives; Spacing Frames; Honey-plants; Willow. The subjects that have been entirely re-written for the present edition are, Hive-making; Introducing Queens; Candy for Bees; Extractors. Those subjects which have received very large additions are, Moving Bees; Reversing; Smokers; Veils; Alighting-boards; Alsike; Apiary; Basswood; Buying Bees; Out-apiaries. There is scarcely a subject that has not received some slight revision.

A noticeable feature of the edition is the absence of the Simplicity hive, either in Hive-making or elsewhere. The comments by G. M. Doolittle are entirely revised and extended. Another feature is a large appendix. In this are put subjects that have come up since the forms where they would regularly go were

printed. The new features that were added in 1890, such as the Picture Gallery and Biographical Sketches, have been retained. In short, we have endeavored to make each edition a complete epitome of the times; and while it assumes the character of an ordinary annual, it is at the same time a complete text-book. The present work contains over 400 large double-column pages of closely compacted matter, the whole being illustrated with something over 300 engravings. This number includes some of the latest that have appeared within the past year.

DOES RENDERING WAX WITH SULPHURIC ACID RENDER THE SAME UNFIT FOR USE BY THE BEES?

SINCE that article from C. P. Dadant, and our footnote on page 702 was put in print, we have been making some experiments. We took about 100 lbs. of wax, rendered with sulphuric acid, and placed the same in our regular melting-vat. From this we dipped wax sheets the same as we did for making foundation. There was absolutely no odor to these sheets, and absolutely no taste after chewing pieces of them for half an hour. To go a little further and make the test sure, we went to the druggist's and got what is known to chemists as blue litmus paper. This is so sensitive that it will show the least trace of any acid or alkali in a substance. If there is a trace of acid, the blue litmus on being dipped into the solution in question will turn red. Red litmus paper will turn blue in a mixture having a slight trace of alkali. Well, we dipped some of this litmus into melted wax that had been rendered by sulphuric acid; and, quite to our astonishment, it showed absolutely no trace of sulphuric acid left; i. e., the paper showed no tendency to turn red. We repeated the experiment in a number of different ways, with the same result. We feel very sure now that wax rendered by sulphuric acid, after being made up into foundation, can have no possible bad effect. We will admit, that the cakes direct from the melting-tank of the sulphuric-acid mixture do have a very slight odor; but on remelting for making foundation, this odor seems to be all volatilized, or done away with in some shape or other.

There is another point, perhaps overlooked by our friend C. P.; and that is, that sulphuric acid has a specific gravity $2\frac{1}{2}$ times that of water; and by the methods which have been described in GLEANINGS, after the dirt and refuse have been boiled in the sulphuric-acid mixture, the melted mixture is allowed to stand for five hours. The wax comes to the surface, and is dipped off. The acid, having a specific gravity $2\frac{1}{2}$ times that of water, settles to the bottom, and leaves the wax entirely, or at least practically, free. This shows that there is a very slight trace or practically no acid left in the original cakes. These cakes, on being melted up again to dip into sheets for foundation, are, so far as we are able to observe, perfectly wholesome, and fit for the bees. There may be some missing links that we have overlooked. If so, our friend C. P. will straighten us out, for he is a keen observer and a bright bee-keeper; but in this we think he will admit our premises after he has tried the tests himself as above described.

FROM A. I. ROOT, JUST BEFORE GOING TO PRESS.

Well, friends, I am here in bed yet, but have much cause for thanksgiving. My blood has got down to only 98 $\frac{1}{2}$ —only $\frac{2}{3}$ of a degree, as you will notice, above the great level of all the blooded universe. Bro. Newman smiled a little at my "enjoying" having the grip. Well, I take it all back. There was a point reached where

even I couldn't find a thing enjoyable about it; and this reminds me, since I have said so much about doctoring *without* medicine, that I shall have something to say, Providence permitting, in our next issue, in regard to doctoring *with* medicine. Very likely the great Father is teaching me some needed lessons along this line.

I regret the absence of the department of gardening; but you will notice that some of it is scattered elsewhere, and probably the boys will give us a few pages extra for our next issue, for they tell me that my crops are bearing prodigiously of every thing. It is two weeks today, August 28, since I had a glimpse of them. And now good-by. From your old friend, perhaps a trifle sadder, but may be a good bit wiser.

A. I. Root.

Our subscription list is now 10,545.

THE UNITED STATES HONEY - PRODUCER'S EXCHANGE.

REPORT UP TO AUGUST 31.

The white honey is now all gathered, and the average crop for the whole of the United States, according to statistical reports, is 62 per cent, which may be considered a pretty good average. In several of the States, notably Illinois, Iowa, Missouri, and Minnesota, quite an amount of dark honey has been gathered (caused by being mixed with honey-dew), and this is not included in the answer to Question 2. There are also several States where all but one or two reports say, "A full crop secured," but the others report a total failure, and, of course, this lowers the general average. The amount of honey sent to market from California will probably average as light as any of the large honey-producing States.

1. What is the approximate number of colonies in your vicinity and locality?
2. What per cent of an average crop of white honey has been secured in your locality?
3. What per cent of this is comb?
4. How does this compare with last year?
5. What is the prospect for a crop of fall honey?

In the last column, 1 stands for good; 2, fair; 4, poor.

STATE.	Qu. 1.	Qu. 2.	Qu. 3.	Question 4.	Q. 5.
Alabama.....	350	100	60	75% better.	2
Arizona.....	1000	55	10	About the same.	1
Arkansas.....	910	35	45	About the same.	4
California.....	2910	25	40	Not half as good.	4
Connecticut.....	275	50	75	Not as good.	2
Colorado.....	2910	63	70	Little over half.	2
Florida.....	750	45	15	Quite a little better.	4
Georgia.....	800	100	85	50% better.	1
Iowa.....	4500	25	50	Not a good.	2
Indiana.....	1364	35	60	Not as good.	2
Indian Territory.					
Illinois.....	2750	45	50	More but poorer.	1
Kansas.....	1600	50	75	Much poorer.	2
Kentucky.....	1000	47	70	50% less.	2
Louisiana.....	850	95	5	50% better.	1
Maine.....	425	100	60	Better per colony.	1
Massachusetts.....	825	60	75	About the same.	1
Maryland.....	1200	75	85	Better crop, poorer.	2
Michigan.....	1500	25	50	About the same.	2
Minnesota.....	1450	50	50	Much better.	1
Mississippi.....	345	75	15	Much better.	2
Missouri.....	2050	20	25	Better crop, dark.	2
Nebraska.....	1190	42	50	Little better.	1
Nevada.....	600	25	15	Much worse.	4
New Hampshire.....	700	100	95	50% better.	2
New Jersey.....	400	100	90	Much better.	1
New York.....	12900	75	80	50% better.	1
North Carolina.....	250	25	90	About the same.	1
Ohio.....	1650	60	80	Much better.	2
Pennsylvania.....	1800	63	90	Much better.	2
Rhode Island.....	383	42	50	Not as good.	4
South Carolina.....	800	100	40	50% better.	1
Tennessee.....	700	125	50	75% better.	1
Texas.....	150	65	20	Much better.	1
Vermont.....	3345	100	95	60% better.	2
Virginia.....	1700	55	75	Some better.	2
West Virginia.....	1850	75	80	More honey.	1
Washington.....	140	40	50	Not as good.	2
Wisconsin.....	5900	75	50	50% better.	2

P. H. ELWOOD, PRES.

G. H. KNICKERBOCKER, SEC.

SPECIAL NOTICES.

MELLILOT, OR SWEET CLOVER WANTED.

Send samples, stating how much you have, and what you will take for it.

CLOVER EXTRACTED HONEY.

We have received a good many samples of honey, with offers; but the most of it seems to be basswood, and off grades. We should be pleased to receive samples of choice clover extracted, with offers.

CHOICE WHITE SECTIONS CHEAP.

We have more than twice our usual year's supply of the choicest white basswood section lumber, which we are working up into sections that can not be excelled in quality and workmanship. Dealers and others who buy in considerable quantities will do well to get our prices before placing their contract for next year's supply, as we are prepared at this time of year to make special prices.

MAPLE SUGAR AND SYRUP.

As the warm weather is pretty well over, perhaps some of our readers will now be interested in maple sugar and syrup. We have a good supply, to ship promptly at the following prices: Maple syrup in 1-gallon cans will be worth \$1.10 per gallon, or \$10.00 for 10 gallons. Of sugar we can furnish three grades at 10, 9, and 8c per lb. for small lots; 50-lb. lots, 1c less; or barrel lots of about 300 lbs., 1c per lb. less. Special price on large lots quoted on request.

NEW EDITION A B C OF BEE CULTURE.

As advised on another page we are now mailing the new revision of our popular text-book, the A B C of Bee Culture. Those who have any of the older editions should also have this latest one. If you can not afford to keep both, sell the old one to a neighbor bee-keeper at a reduced price, and we will furnish you the new one at \$1.00, postpaid. Remember, this price is only to those who have already had one, and so mention in their order, or to any one who orders with GLEANINGS one year, sending \$2.00 for both. The price is \$1.25 postpaid to all others; and, please remember, dealers and others, that we do not furnish it in paper covers. We gave notice nearly two years ago that we would discontinue making them, and yet many still order them. We have to send the cloth and charge the difference.

STURWOLD'S SHOW - CASE For Retailing Honey.

This case is 2½ feet high and 20 in. square, outside measure, top and bottom. The glass of which it is made is 16x26. The case is to be set up in any grocery, drug-store, or any other place of business where you wish your honey exhibited or sold. These show-cases are shipped from here. Price \$4.00. With your name and address, \$4.50. As the glass is very apt to be broken in transit we will ship them with the glass boxed separately at same price, if you prefer. As the cases are put together with glue we can not set them in the flat.



A. I. ROOT, Medina, O.

Five-Banded Italians

Are the handsomest and gentlest bees I have ever seen, are good workers, and are not inclined to rob. My breeding queen, together with her bees, took **First Premium** at the Detroit exposition last fall. I can furnish untested queens for \$1.00 each, or 6 for \$5.00; tested queens, \$2.00 each; select tested, \$3.00 each. Safe arrival guaranteed. Make money orders payable at Flint, Mich. 17tfdb

ELMER HUTCHINSON,
ROGERSVILLE, GENESEE CO., MICH.

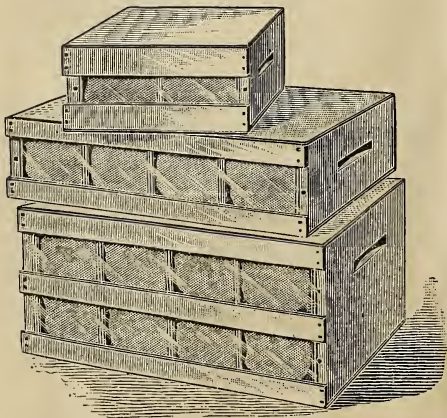
In responding to this advertisement mention GLEANINGS.

On Their Own Merits.

My 5-Banded Golden Italians will give satisfaction. Try them. Warranted queens, \$1, 3 for \$2.50. Tested queens, \$1.50. Circular free. 17-19d

CHARLES D. DUVALL,
Spencerville, Montg'y Co., Md.

Shipping - Cases.



Above we show our three staple sizes of cases for packing 1-lb. sections for market. The trade as a rule much prefer the two smaller sizes, the 12 and 24 lb. single tier, but there are some who still cling to the 48-lb. double-tier case, so we still furnish them. We also make the 24-lb. double-tier cases for those who want them, at the same price as the single-tier case. We make odd sizes to order; prices quoted on application.

PRICE LIST OF SHIPPING-CASES.

	Nailed, with glass, each.	1	10	100
48-lb. double-tier shipping-case.....	\$ 35	\$ 20	\$1.80	\$16.00
24-lb. single-tier	25	16	1.40	12.00
12-lb. "	15	10	.80	6.00

No glass is included with cases in flat.

We make above cases to take glass on both sides or only one side as ordered.

If order does not specify we send cases to take glass one side only.

Above cases are all for sections 4½x4½x1½.

For other widths of the 4½ section in lots of 10 or more, same price if specified in the order.

Cases for 4½-inch sections, or for the 4½-inch with cartons on them, 1 cent each extra, in lots of 10 or more.

For price of cases for other sized sections write us.

GLASS FOR SHIPPING-CASES.

Size of glass.	Per sheet	Per 10 sheets	Per box of 50 ft.	No. of sheets in box
8 x 17½ in. 24 lb single-tier case.				
and 48 lb double-tier cases.	3c	25c	2 50	133
2 x 17½ combined crate	2c	20c	2 50	200
2 x 9 12-lb. cases	1c	10c	2 50	400

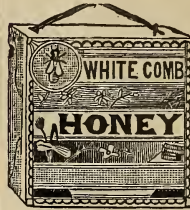
A. I. ROOT, MEDINA, O.

VANDERVORT COMB-FOUNDATION MILLS.

Send for samples and reduced price list.

17fd **JNO. VANDERVORT,** Laceyville, Pa.
Please mention this paper.

PASTEBOARD BOXES, OR CARTONS.



Bee-keepers are realizing more and more the value of these cartons for putting their comb honey in marketable shape. Other articles of home consumption are put up in a neat attractive way, and in shape to be handed to the customer, and carried safely without wrapping. Why not sections of comb honey, especially when the cost of the boxes is so low?

TABLE OF PRICES OF 1-LB. SECTION CARTONS.

Name or designation.	Price of 1	25	100	500	1000
1-lb. carton, plain.....	2	.30	.60	2.75	5.00
1-lb. carton, printed one side, one color, name and address.....			.90	3.50	6.00
1-lb. carton, printed two or three colors, one side			1.00	3.75	6.50
1 lb. carton, printed one color on both sides, name and address.....			1.00	3.75	6.50
1-lb. carton, printed two or three colors, both sides.....			1.10	4.00	7.00

We can no longer furnish the lithograph labels, and printing on the box in two or three colors is cheaper and more tasty.

If sent by mail, postage will be 2 cts. each; or in lots of 25 or more, 1 cent each. All the above have tape handles. Price, without tape handles, 5c per 100, or 75c per 1000 less. The quality of the boxes is fair, being made of strawboard, plated outside. If more than 1000 are wanted, write for prices.

A. I. ROOT, Medina, O.

Price List of Jones Lithograph Labels.

10 per cent reduction for 60 days from the following:

Name of Label.	Size in Inches.	Price.	100	1000	10000	50000	250000	1000
5-lb. Jones Lithogr'h.	6½ x 14	1 00 9.50	.12	1.20	1.00	75	50	30
2½ ditto.	3½ x 14	.60 5.50	.6	.52	1.00	75	50	30
1 ditto light.	4½ x 9½	.50 4.00	.4	.35	1.00	75	50	30
1 ditto darker.	4½ x 9½	.50 4.00	.4	.35	1.00	75	50	30
½ ditto.	2½ x 8½	.25 2.00	.3	.28	.90	75	50	30
¼ ditto.	2 x 7½	.25 2.00	.3	.25	.90	75	50	30
1/8 ditto.	1½ x 5½	.15 1.00	.2	.18	.90	75	50	30
E ditto.	2½ x 16	.50 4.50	.4	.36				
F ditto.	2½ x 16	.50 4.50	.4	.36				
G ditto.	2½ x 13½	.55 5.00	.5	.42	1.00	75	50	30
H ditto.	2½ x 13½	.55 5.00	.5	.42				
I ditto.	3½ x 14	.60 5.50	.6	.52	1.00	75	50	30
J ditto.	2½ x 16	.60 5.50	.6	.52				
Abbott Oval Lith'ph.	2½ x 2½	.30 2.00						

In order to work down our stock of these labels we offer a reduction of 10 per cent from above prices for the next 60 days.

Those of you who have never seen these labels can form little idea how handsome they are; and that you may see them without much expense we will put up a sample package of 1 of each kind, with one dozen of the last named, and mail postpaid for ten cents. Eight of the above may be divided into 2 and 3 labels each, so that you can get a small lot (over 30) of handsome lithograph labels, no two alike, for only 10 cts. These sample packages would be very good for labeling a small fair exhibit. They would at least add variety. We can not, of course, print your name and address on the sample package or any number less than 100, and those opposite, which we give no price for printing, have no blank place for such printing, and hence can not be printed. All the above are ungummed. You can not get lithograph or many colored labels on gummed paper.

ABBOTT LITHOGRAPH LABELS REDUCED.

Having a very large stock of the oval 12-color lithograph labels which we desire to move off at this time, we offer them, for the next 60 days, at the following reduced prices, postpaid: 25 cents per 100; 50 for \$1.00; 1000 for \$1.75.

A. I. ROOT, Medina, Ohio.

FOR SALE. 20 colonies Italian bees at \$5.00 each. Simplicity hive, eight brood-frames, one broad frame filled with sections. Plenty of honey. 16-17-18d FRANKLIN THORN, Paterson, N. J.

DON'T you want to improve your stock? Don't you want nice large business Italians that will just "roll in the honey"? Seven years careful breeding from the best stock obtainable; 650 queens sold, and never heard of but one mismatched. Queens large, yellow, and prolific. Warranted, 75c: 3 for \$2.00; or a select breeder, \$1.50. Your orders appreciated. Return mail. 16tfdb.

W. H. LAWS, LAVACA, ARKANSAS.

In responding to this advertisement mention GLEANINGS.

IF YOU WANT BEES

That will just "roll" in the honey, try **Moore's Strain of Italians**, the result of twelve years' careful breeding. Reduced prices: Warranted queens, 80 cents each; 3 for \$2.00. Safe arrival and satisfaction guaranteed. Those who have never dealt with me I refer to A. I. Root, who has purchased of me, during past 11 years, 505 queens. Circulars free. 13-14d

J. P. MOORE, Morgan, Pendleton Co., Ky.
Money-order office, Falmouth, Ky.

Please mention this paper.

7d

Boxes and Shipping-Grates.

EVAPORATED APPLE-BOXES and SHIPPING-CRATES A SPECIALTY.

In this line we take the lead. If any one reading this ad. will send us the name of driers we will make it right with them. Send for prices. Address

W. D. SOPER & CO., JACKSON, MICH.

15-17-19-21d

Please mention this paper.

BEST ON EARTH



ELEVEN YEARS WITHOUT A PARALLEL, AND THE STANDARD IN EVERY CIVILIZED COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/4 in.,	postpaid	...\$2.00
Conqueror	3	"	... 1.75
Large	2 1/4	"	... 1.50
Extra (wide shield)	2	"	... 1.25
Plain (narrow)	2	"	... 1.00
Little Wonder,	1 1/4	"65
Uncapping Knife.....			... 1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do, your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarabsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to

16tfdb BINGHAM & HETHERINGTON, Abonia, Mich.

In responding to this advertisement mention GLEANINGS

PATENT WIRED COMB FOUNDATION

HAS NO SAG IN BROOD-FRAMES.

THIN FLAT - BOTTOM FOUNDATION

Has No Fish-bone in Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made.

J. VAN DEUSEN & SONS,

Sole Manufacturers, 5tfdb
Sprout Brook, Montgomery Co., N. Y.



Bee-Hives, Sections, Etc.

BEST GOODS at LOWEST PRICES.

We make 15,000 sections per hour. Can fill orders promptly. Write for free, illustrated catalogue.

G. B. LEWIS CO., WATERTOWN, WIS.

In responding to this advertisement mention GLEANINGS.

PASTEBOARD BOXES.

CRAWFORD'S SECTION CARTONS
ARE JUST WHAT YOU WANT.

SEND FOR NEW PRICE LIST.

A. O. CRAWFORD,

11tfdb

SOUTH WEYMOUTH, MASS.

In responding to this advertisement mention GLEANINGS

ITALIAN QUEENS.

If you want queens that are bred for business, send to me. See adv't in GLEANINGS of June 15th. Every queen warranted in every respect. Price 75 cents each.

JAMES WOOD,

NO. PRESCOTT, MASS.

11tfdb

Please mention this paper.

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE & KEITH.

14tfdb

New London, Wis.

In writing advertisers please mention this paper.

DR. TINKER'S SPECIALTIES!

The Nonpareil Bee-hive and Winter case, White Poplar Sections, Wood-zinc Queen-Excluders, and the finest and best Perforated Zinc now made.

Send for catalogue of prices, and inclose 25 cts. for the new book, **Bee-keeping for Profit.**

Address

DR. G. L. TINKER,

21tfdb

New Philadelphia, O.

In writing to advertisers please mention this paper.

MUTH'S Honey - Extractor.

Square Glass Honey-Jars,

Tin Buckets, Bee-Hives

Honey-Sections, &c., &c.

Perfection Cold-Blast Smokers.

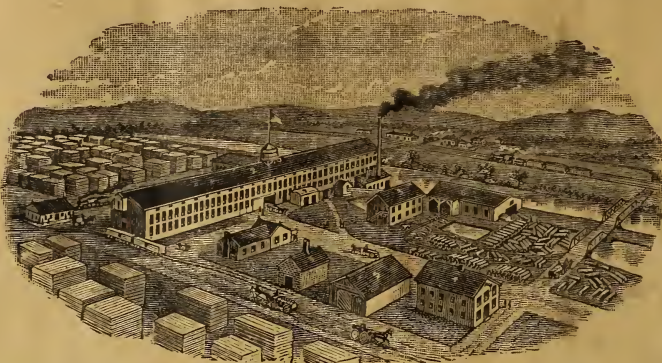
APPLY TO

CHAS. F. MUTH & SON, Cincinnati, O.

P. S.—Send 10-ct. stamp for "Practical Hints to Bee-keepers." Please mention this paper.

5 PER CENT DISCOUNT

ON ALL



GOODS

UNTIL DECEMBER 1ST,

EXCEPTING SHIPPING-CASES, AND HONEY JARS AND CANS.

Large Illustrated Catalog and copy of **THE AMERICAN BEE-KEEPER** (a 24-page monthly) free. Send for **FALL CIRCULAR**, describing our new

OUTSIDE WINTER CASE FOR DOVETAILED HIVES.

CHEAPEST AND BEST MADE. Address

THE W. T. FALCONER MFG. CO., Jamestown, N. Y.

Please mention this paper.

1878 DADANT'S COMB FOUNDATION. 1891

HALF A MILLION LBS. SOLD IN THIRTEEN YEARS. OVER \$200,000 IN VALUE.

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretchmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wis.; J. Mattoon, Atwater, O.; Oliver Foster, Mt. Vernon, Ia.; C. Hertel, Freeburg, Ill.; E. T. Abbott, St. Joseph, Mo.; **E. Lovett, San Diego, Cal.; E. L. Goold & Co., Brantford, Ont., Can.;** Page, Keith & Schmidt, New London, Wis.; J. Stauffer &

Son, Nappanee, Ind.; Berlin Fruit-box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Haussen, Davenport, Ia.; C. Theilman, Theilman-ton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Pouder, Indianapolis, Ind.; Martin & Co., 1141 15th St., Denver, Col.; I. D. Lewis & Son, Hiawatha, Kan.; F. C. Erkel, LeSueur, Minn.; Mrs. J. N. Heater, Columbus, Neb.; Buckeye Bee Supply Co., New Carlisle, O.; Levering Bros, Wicota, Ia.; G. Dittmer, Augusta, Wis.; John Rey East Saginaw, Mich., and numerous other dealers.

It is **the Best**, and guaranteed every inch equal to sample. All dealers who have tried it have increased their trade every year.

SAMPLES, CATALOG, FREE TO ALL. SEND YOUR ADDRESS.

1852

LANGSTROTH ON THE HONEY-BEE. Revised.

1891

Those who wish a book in which they will find, without difficulty, whatever information beginners desire, should send for this work. Its arrangement is such that any subject and all its references can be found very readily, by a system of indexing numbers. It is the most complete treatise in the English language.

—A FRENCH EDITION JUST PUBLISHED.—

HANDLING BEES, PRICE 8 CTS.

is a chapter of the Langstroth revised, and contains instructions to beginners on the handling and taming of bees.

Bee-veils of Best Imported Material. Samples **FREE**. Smokers, Honey Sections, Extractors, Tin Pails for Honey, Etc. Instructions to Beginners with Circular, Free.

CHAS. DADANT & SON, Hamilton, Hancock Co., Ill.

Please mention this paper.